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Bureau of Mines

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Mandatory Safety Standards, Underground Coal Mines

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Title 30—MINERAL RESOURCES

Chapter I—Bureau of Mines, Department of the Interior

SUBCHAPTER O—COAL MINE HEALTH AND SAFETY

PART 75—MANDATORY SAFETY STANDARDS, UNDERGROUND COAL MINES

Pursuant to the authority contained in paragraph (d) of section 301 of the Coal Mine Health and Safety Act of 1969 (Public Law 91-173), there was published in the FEDERAL REGISTER for August 14, 1970 (35 F.R. 12911), a notice of proposed rulemaking setting forth proposed amendments and a new Subpart S, "Approved Books and Records," to Part 75 of Title 30, Code of Federal Regulations, regarding mandatory health and safety standards in underground coal mines.

Interested persons were afforded a period of 30 days from the date of publication of the notice in which to submit written comments, suggestions, or objections to the proposed amendments and the proposed new Subpart S. The period for submitting written comments, suggestions, or objections was subsequently extended to September 30, 1970, by a notice published in the FEDERAL REGISTER for September 5, 1970 (35 F.R. 14146). Approximately 21 associations, companies, and individuals submitted comments, suggestions, or objections. All were given careful consideration. A summary of the comments and an explanation of the actions taken with respect to them will be prepared by the Bureau of Mines and will be available 30 days from the date of this publication in the Office of the Deputy Director for Health and Safety, Room 4612, Bureau of Mines, Department of the Interior, Washington, D.C. 20240.

Some of the standards have been revised as suggested; in other instances, revisions were made in view of the comments received. Some of the suggestions could not be adopted because they were contrary to the statutory provisions.

Part 75 of Title 30, Code of Federal Regulations, Subchapter O—Coal Mine Health and Safety—Mandatory Health and Safety Standards, Underground Coal Mines, amended and revised as set forth below is herewith promulgated and shall become effective upon publication in the FEDERAL REGISTER.

WALTER J. HICKEL,
Secretary of the Interior.

NOVEMBER 12, 1970.

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AUTHORITY: The provisions of this Part 75 issued pursuant to the authority vested in the Secretary of the Interior under secs. 301 (d) and 508 of the Federal Coal Mine Health and Safety Act of 1969, Public Law 91-173, 83 Stat. 747, 30 U.S.C. 812.

Subpart A—General

§ 75.1 Scope.

This Part 75 sets forth safety standards compliance with which is mandatory in each underground coal mine subject to the Federal Coal Mine Health and Safety Act of 1969. Some standards also are applicable to surface operations. Regulations and criteria supplementary to these standards also are set forth in this part.

§ 75.2 Definitions.

[STATUTORY PROVISIONS]

For the purpose of this Part 75, the term—

(a) "Certified" or "registered" as applied to any person means a person certified or registered by the State in which the coal mine is located to perform duties prescribed by this Part 75, except that in a State where no program of certification or registration is provided or where the program does not meet at least minimum Federal standards established by the Secretary, such certification or registration shall be by the Secretary;

(b) "Qualified person" means, as the context requires,

(1) An individual deemed qualified by the Secretary and designated by the operator to make tests and examinations required by this Part 75; and

(2) An individual deemed, in accordance with minimum requirements to be established by the Secretary, qualified by training, education, and experience, to perform electrical work, to maintain electrical equipment, and to conduct examinations and tests of all electrical equipment;

(c) "Permissible" as applied to—

(1) Equipment used in the operation of a coal mine, means equipment, other than permissible electric face equipment, to which an approval plate, label, or other device is attached as authorized by the Secretary and which meets specifications which are prescribed by the Secretary for the construction and maintenance of such equipment and are designed to assure that such equipment will not cause a mine explosion or a mine fire.

(2) Explosives, shot-firing units, or blasting devices used in such mine, means explosives, shot-firing units, or blasting devices which meet specifications which are prescribed by the Secretary, and

(3) The manner of use of equipment or explosives, shot-firing units, and blasting devices, means the manner of use prescribed by the Secretary;

(d) "Rock dust" means pulverized limestone, dolomite, gypsum, anhydrite, shale, adobe, or other inert material preferably light colored, 100 per centum of which will pass through a sieve having 20 meshes per linear inch and 70 per centum or more of which will pass through a sieve having 200 meshes per linear inch; the particles of which when wetted and dried will not cohere to form a cake which will not be dispersed into separate particles by a light blast of air; and which does not contain more than 5 per centum of combustible matter or more than a total of 4 per centum of free and combined silica (SiO_2), or, where the Secretary finds that such silica concentrations are not available, which does not contain more than 5 per centum of free and combined silica;

(e) "Anthracite" means coals with a volatile ratio equal to 0.12 or less;

(f) "Volatile ratio" means volatile matter content divided by the volatile matter plus the fixed carbon;

(g) (1) "Working face" means any place in a coal mine in which work of extracting coal from its natural deposit in the earth is performed during the mining cycle,

(2) "Working place" means the area of a coal mine inby the last open crosscut,

(3) "Working section" means all areas of the coal mine from the loading point of the section to and including the working faces,

(4) "Active workings" means any place in a coal mine where miners are normally required to work or travel;

(h) "Abandoned areas" means sections, panels, and other areas that are not ventilated and examined in the manner required for working places under Subpart D of this Part 75;

(i) "Permissible" as applied to electric face equipment means all electrically operated equipment taken into or used inby the last open crosscut of an entry or a room of any coal mine the electrical parts of which, including, but not limited to, associated electrical equipment, components, and accessories, are designed, constructed, and installed, in accordance with the specifications of the Secretary, to assure that such equipment will not cause a mine explosion or mine fire, and the other features of which are designed and constructed, in accordance with the specifications of the Secretary, to prevent, to the greatest extent possible, other accidents in the use of such equipment; and the regulations of the Secretary or the Director of the Bureau of Mines in effect on March 30, 1970, relating to the requirements for investigation, testing, approval, certification, and acceptance of such equipment as permissible shall continue in effect until modified or superseded by the Secretary, except that the Secretary shall provide procedures, including, where feasible, testing, approval, certification, and acceptance in the field by an authorized representative of the Secretary, to facilitate compliance by an operator with the requirements of § 75.500 within the periods prescribed therein;

(j) "Low voltage" means up to and including 660 volts; "medium voltage" means voltages from 661 to 1,000 volts; and "higher voltage" means more than 1,000 volts;

(k) "Respirable dust" means only dust particulates 5 microns or less in size;

(l) "Coal mine" includes areas of adjoining mines connected underground;

(m) "Secretary" means the Secretary of the Interior or his delegate; and

(n) "Act" means the Federal Coal Mine Health and Safety Act of 1969.

Subpart B—Qualified and Certified Persons

§ 75.100 Certified person.

(a) The provisions of Subpart D—Ventilation of this Part 75 require that certain examinations and tests be made by a certified person. A certified person within the meaning of those provisions

is a person who has been certified as a mine foreman (mine manager), an assistant mine foreman (section foreman), or a preshift examiner (mine examiner). A person who has been so certified is also a qualified person within the meaning of those provisions of Subpart D of this part which require that certain tests be made by a qualified person and within the meaning of § 75.1106.

(b) A person who is certified as a mine foreman, an assistant mine foreman, or a preshift examiner by the State in which the coal mine is located is, to the extent of the State's certification, a certified person within the meaning of the provisions of Subpart D of this part and § 75.1106 referred to in paragraph (a) of this section.

(c) (1) The Secretary may temporarily certify for periods of time not to exceed 6 months for each such temporary certification, persons in the categories of mine foreman, assistant mine foreman, and preshift examiner whenever the State in which such persons are presently employed in such categories does not provide for such certification with respect to the coal mines in which such persons are employed, if the operator of such a coal mine in which such persons are employed makes an application and satisfactory showing that each such person has had at least 2 years experience underground in a coal mine and has held the position of mine foreman, assistant mine foreman, or preshift examiner for a period of 6 months immediately preceding the filing of the application and is qualified to test for methane and for oxygen deficiency. Applications for temporary Secretarial certification should be submitted in writing to the Health and Safety Activity, Bureau of Mines, Department of the Interior, 4800 Forbes Avenue, Pittsburgh, Pa. 15213.

(2) A person certified by the Secretary under this paragraph (c) will be a certified person, within the meaning of the provisions of Subpart D of this part and § 75.1106 referred to in paragraph (a) of this section, only with respect to the coal mine in which he is employed at the time the application for certification is filed.

§ 75.150 Tests for methane and for oxygen deficiency; qualified person.

(a) The provisions of Subpart D—Ventilation of this part and § 75.1106 require that tests for methane and for oxygen deficiency be made by a qualified person. A person is a qualified person for this purpose if he is a certified person under § 75.100.

(b) Pending issuance of Federal standards, a person will be considered a qualified person for testing for methane and for oxygen deficiency:

(1) If he has been qualified for this purpose by the State in which the coal mine is located; or

(2) The Secretary may qualify persons for this purpose in a coal mine in which persons are not qualified for this purpose by the State upon an application and a satisfactory showing by the operator of the coal mine that each such person has been trained and designated by the operator to test for methane and oxygen deficiency and has made such tests for a period of 6 months immediately preceding the application. Applications for Secretarial qualification should be submitted to the Health and Safety Activity, Bureau of Mines, Department of the Interior, 4800 Forbes Avenue, Pittsburgh, Pa. 15213.

§ 75.151 Tests for methane; qualified person; additional requirement.

Notwithstanding the provisions of § 75.150, on and after January 1, 1971, no person shall be a qualified person for testing for methane unless he demonstrates to the satisfaction of an authorized representative of the Secretary that he is qualified to test for methane with a portable methane detector approved by the Bureau of Mines under Part 22 of this chapter (Bureau of Mines Schedule 8C).

§ 75.152 Tests of air flow; qualified person.

A person is a qualified person within the meaning of the provisions of Subpart D—Ventilation of this part requiring that tests of air flow be made by a qualified person only if he is a certified person under § 75.100 or a person trained and designated by a certified person to perform such tests.

§ 75.153 Electrical work; qualified person.

(a) An individual is a qualified person within the meaning of §§ 75.511 and 75.512, to perform electrical work (other than work on energized surface high voltage lines) if he has been qualified as a mine electrician by the State in which the mine is located and if the State required, as a condition of qualification at least 1 year experience in performing electrical work underground in a coal mine.

(b) If the State in which the mine is located does not require as a condition of qualification at least 1 year experience in performing electrical work underground in a coal mine or if a State has no program for qualifying persons as mine electricians, the Secretary, pending issuance of federal standards which will give recognition to practical experience, may temporarily qualify persons for this purpose for periods of time not to exceed 6 months for each temporary certification if the operator of the coal mine in which such persons are employed makes an application and a satisfactory showing that each such person (1) has been performing electrical work, including the inspection, testing, and maintenance of electrical equipment and circuits, underground in a coal mine for 1 year preceding the application, or (2) has equivalent experience. Applications for temporary Secretarial qualification and renewals for an additional 6 months should be submitted in writing to the Health and Safety Activity, Bureau of Mines, Department of the Interior, Pittsburgh, Pa. 15213.

§ 75.154 Repair of energized surface high voltage lines; qualified person.

An individual is a qualified person within the meaning of § 75.705 for the purpose of repairing energized surface high voltage lines only if he has had at least 2 years experience in electrical maintenance, and at least 2 years experience in the repair of energized high voltage surface lines located on poles or structures.

§ 75.155 Qualified hoisting engineer; qualifications.

(a) (1) A person is a qualified hoisting engineer within the provisions of Subpart O of this part, for the purpose of operating a steam-driven hoist in a coal mine, if he has at least 1 year experience as an engineer in a steam-driven hoisting plant and is qualified by the State in which the mine is located as a steam-hoisting engineer; or

(2) If a State has no program for qualifying persons as steam-hoisting engineers, the Secretary may temporarily qualify persons for this purpose for periods of time not to exceed 6 months for each temporary certification if the operator of the coal mine in which such persons are employed makes an application and a satisfactory showing that each such person has had 1 year experience in operating steam-driven hoists and has held the position of hoisting engineer for a period of 6 months immediately preceding the application.

(b) (1) A person is a qualified hoisting engineer within the provisions of Subpart O of this part, for the purpose of operating an electrically driven hoist in a coal mine, if he has at least 1 year experience operating a hoist plant in a mine or maintaining electric-hoist equipment in a mine and is qualified by the State in which the mine is located as an electric-hoisting engineer; or

(2) If a State has no program for qualifying persons as electric-hoisting engineers, the Secretary may temporarily qualify persons for this purpose for periods of time not to exceed 6 months for each temporary certification if the operator of the coal mine in which such persons are employed makes an application and a satisfactory showing that each such person has had 1 year experience in operating electric-driven hoists and has held the position of hoisting engineer for a period of 6 months immediately preceding the application.

(c) Applications for Secretarial qualification should be submitted to the Health and Safety Activity, Bureau of Mines, Department of the Interior, 4800 Forbes Avenue, Pittsburgh, Pa. 15213.

§ 75.159 Records of certified and qualified persons.

The operator of each coal mine shall maintain a list of all certified and qualified persons designated to perform duties under this Part 75.

§ 75.160 Training programs.

[STATUTORY PROVISION]

Every operator of a coal mine shall provide a program, approved by the Secretary, of training and retraining of both qualified and certified persons needed to carry out functions prescribed in the Act.

§ 75.160–1 Plans for training programs.

On or before December 31, 1970, each operator shall submit to the District Manager a program or plan setting forth what, when, how, and where he will train and retrain persons whose work assignments require that they be certified or qualified. Such program shall provide: (a) For certified persons, annual training courses in methane measurement and oxygen deficiency testing, roof and rib control, ventilation, first aid, principles of mine rescue, and the provisions of this Part 75, and (b) for qualified persons, annual courses in performance of the tasks which they perform as qualified persons.

Subpart C—Roof Support

§ 75.200 Roof control programs and plans.

[STATUTORY PROVISIONS]

Each operator shall undertake to carry out on a continuing basis a program to improve the roof control system of each coal mine and the means and measures to accomplish such system. The roof and ribs of all active underground roadways, travelways, and working places shall be supported or otherwise controlled adequately to protect persons from falls of the roof or ribs. A roof control plan and revisions thereof suitable to the roof conditions and mining system of each coal mine and approved by the Secretary shall be adopted and set out in printed form on or before May 29, 1970. The plan shall show the type of support and spacing approved by the Secretary. Such plan shall be reviewed periodically, at least every 6 months by the Secretary, taking into consideration any falls of roof or ribs or inadequacy of support of roof or ribs. No person shall proceed beyond the last permanent support unless adequate temporary support is provided or unless such temporary support is not required under the approved roof control plan and the absence of such support will not pose a hazard to the miners. A copy of the plan shall be furnished to the Secretary or his authorized representative and shall be available to the miners and their representatives.

§ 75.200–1 Roof control program requirements.

Each operator shall adopt an adequate program for improving roof control systems. This program shall include a roof control plan, provision for the training of miners, a history of all unintentional roof falls, and systematic evaluation of the effectiveness of the roof control system in use.

§ 75.200–2 Roof control plans.

Each operator shall adopt a roof control plan suitable to the roof conditions and the mining system for all underground roadways, travelways including escapeways, and working places of each mine.

§ 75.200–3 Filing of roof control plans.

Roof control plans shall be filed with the District Manager of the Coal Mine Health and Safety District in which the mine is located.

§ 75.200–4 Actions on roof control plans.

The appropriate District Manager shall notify the operator in writing of the approval of a proposed roof control plan. If revisions are required for approval, the changes required will be specified and the operator will be afforded an opportunity to discuss the revisions with the District Manager.

§ 75.200–5 General information required in roof control plans.

A roof control plan shall include the following information:

(a) Name and address of the company.

(b) Name and address of the mine.

(c) Names and addresses of the responsible officials.

(d) Area of the mine covered by the roof control plan.

(e) A columnar section of the mine strata which shall:

(1) Show the name and thickness of the coalbed mined and any persistent partings.

(2) Identify by type and show the thickness of each stratum (rock layer) up to and including the main roof over and for 10 feet under the coalbed.

(3) Show the maximum cover over the mining area covered included in the roof control plan.

(f) A description of the sequence of mining and installation of supports including temporary supports. The description shall include:

(1) Drawings on 8½-inch by 11-inch paper or on paper folded to this size, showing the location of all roof, face, and rib supports for each method of mining employed at the mines. The scale shall be specified and not less than 5 feet to the inch nor more than 20 feet to the inch. A legend explaining all the symbols used shall also be included on the drawings.

(2) A list of all roof support materials employed in the roof control system including, where applicable, the name of the manufacturer and its designation for the item. Prior approval shall be obtained before making any changes in the materials listed.

§ 75.200–6 Criteria for approval of roof control plans.

Sections 75.200–7 through 75.200–14 set out the criteria by which District Managers will be guided in approving roof control plans on a mine-by-mine basis. Additional measures may be required. Roof control plans which do not conform to these criteria may be approved providing the operator can satisfy the District Manager that the resultant roof conditions will provide no less than the same measure of protection to the miners.

§ 75.200–7 Criteria—Full roof bolting plan.

A full roof bolting plan is one in which roof bolts constitute the sole means of roof support at a face as part of the normal mining cycle.

(a) Roof bolt assemblies should meet the following specifications:

(1) All components of the roof bolt assembly should comply with the American National Standards Institute, "Specifications for Roof Bolting Materials in Coal Mines".

(2) Roof bolts that provide support by creating a beam of laminated strata should be of a length that assures adequate anchorage, but in no case should the length of the bolt be less than 30 inches.

(3) Roof bolts that provide support by suspending the immediate roof from a stronger overlying strata should be of a length that permits anchoring at least 12 inches in the stronger strata.

(4) Bearing plates used directly against the mine roof should be not less than 6 inches square or of equivalent area. In exceptional cases where the mine roof is firm and not susceptible to sloughing, bearing plates 5 inches square or of equivalent area may be used.

(5) When wooden material such as planks, header blocks, and crossbars are used between the bearing plate and the roof for additional bearing, the use should be limited to short life openings (not to exceed 3 years) unless treated. Bearing plates used in conjunction with wooden materials should be not less than 4 inches square or of equivalent area.

(6) When washers are used, the shape of such washers should conform to the shape of roof bolt head and the shape of the bearing plate and such washers should be of sufficient strength to withstand loads up to the yield point of the roof bolt.

(b) Installation practices:

(1) Finishing bits should be easily identifiable by sight or feel and the diameter should be within a tolerance of plus 0.030-inch minus zero of the manufacturers recommended hole diameter for the anchor used.

(2) Torque ranges specified in the roof control plan should be capable of providing roof bolt loads to within plus or minus 1,000 pounds of 50 percent of either the yield point of the roof bolt being used or the anchorage capacity of the strata, whichever is less. In no case, however, should installed torques provide loads that exceed the yield point of the roof bolt being used or the anchorage capacity. Relationship for determining roof bolt load for torque applied are as follows:

CONE NECK OR SELF-CENTERING ROOF BOLT

⅝-inch expansion type roof bolt—30 lbs. of load per ft.-lb. of torque.
¾-inch expansion type roof bolt—30 lbs. of load per ft.-lb. of torque.

STANDARD ROOF BOLT WITHOUT HARD WASHER OR LUBRICANT

⅝-inch expansion type roof bolt—50 lbs. of load per ft.-lb. of torque.
¾-inch expansion type roof bolt—40 lbs. of load per ft.-lb. of torque.

STANDARD ROOF BOLT WITH HARD WASHER OR LUBRICANT

⅝-inch expansion type roof bolt—60 lbs. of load per ft.-lb. of torque.
¾-inch expansion type roof bolt—60 lbs. of load per ft.-lb. of torque.

(3) Each operator should outline and describe roof bolt testing procedures to be followed in the roof control plan. The procedures to be followed should include:

(i) Providing and maintaining an approved, calibrated torque wrench on each roof bolting machine. An approved wrench should be one that will indicate the actual torque on the roof bolt.

(ii) Designating a qualified person to spot-check torques on at least 25 percent of the roof bolts immediately after the working place has been fully bolted. If the majority of the installed torques fall outside the recommended range, the remaining roof bolts in the working place should be tested. If the majority of the torques still fall outside the recommended range, necessary adjustments in the equipment used for tightening the roof bolts should be made immediately. If, after adjustments are made and required torques are not achieved, supplementary support such as additional roof bolts, longer roof bolts with adequate anchorage, posts, cribs, or crossbars should be installed.

(iii) On a daily basis, spot-check torques on at least 10 percent of the roof bolts from the outby corner of the last open crosscut to the face and record the results. This record should show the number of roof bolts tested, number of roof bolts below the recommended range, and the number of roof bolts above the recommended range. If results show that a majority of the roof bolts are not maintaining at least 70 percent of the minimum torque required (50 percent if plates bear against wood), or have exceeded the maximum required torque by 50 percent, supplementary support such as additional roof bolts, longer roof bolts with adequate anchorage, posts, cribs, or crossbars should be installed until a review of the adequacy of the roof control plan is made by an authorized representative of the Secretary.

(4) Devices should be used to compensate for the angle when roof bolts are installed at angles greater than 5° from the perpendicular to the roof line.

(c) Roof bolting pattern:

(1) Roof bolt spacing either lengthwise or crosswise should not exceed 5 feet.

(2) Roof bolts should be installed as close as possible to, but not more than 5 feet from the rib before a sidecut is started.

(3) Roof bolts should be installed as close as possible to, but not more than 5 feet from, the face before starting conventional cutting or a continuous miner run.

(d) Openings should not exceed 20 feet in width where roof bolting is the sole means of roof support.

§ 75.200–8 Criteria—Conventional roof control plan.

A conventional roof control plan is one in which installation of materials other than roof bolts such as metal or wood posts, jacks, or cribs in conjunction with wooden cap blocks (half headers), footers (sills), planks and beams are installed as the sole means of roof support at a face as part of the normal mining cycle.

(a) Support materials should meet the following specifications:

(1) Posts should be of solid, straight grain wood with the ends sawed square and free from defects which would affect their strength.

(2) The diameter of round posts should not be less than one inch for each 15 inches of length, but in no case should the diameter be less than 4 inches; split posts should have a cross-sectional area equal to that required for round posts to equivalent length.

(3) Wooden cap blocks and footers should have flat paralleled sides and be not less than 2 inches thick, 4 inches wide and 12 inches long.

(4) Wooden crossbars and planks should be straight and of solid wood. Crossbars should have a minimum cross-sectional area of 24 square inches and the minimum thickness should be 3 inches. Planks should have a minimum cross-sectional area of 8 square inches and a minimum thickness of 1 inch.

(5) Cribbing material should be of wood having parallel flat sides. In no case should the crib be less than 30 inches square.

(b) Installation practices:

(1) No more than two wooden wedges should be used to install a post.

(2) Posts should not be installed under roof susceptible to sloughing or under disturbed roof without a wooden cap block, plank, or crossbar between the post and the roof.

(3) Posts should be installed tight and on solid footing.

(4) Blocks used for lagging between the roof and wooden crossbars, planks, or metal bars should be spaced so that the load on the supports will be equally distributed.

(5) Cap blocks should be used between jacks and the roof.

(c) Conventional support pattern:

(1) Spacing of roadway roof supports should not exceed 5 feet.

(2) Width of roadways should not exceed 14 feet on the straight and 16 feet on the curves.

(3) Roof supports should be installed to within 5 feet of the uncut face; however, the supports nearest the face may be removed to facilitate the operation of face equipment if equivalent temporary support is installed prior to removal.

(4) When an opening is no longer needed for storing supplies or for travel of equipment the roof at the entrance of all such openings along travelways should be supported by extending the post line across the opening.

(d) Openings should not exceed 20 feet in width where the roof is supported solely by conventional means.

§ 75.200–9 Criteria—Combination roof control plan.

For a plan where both roof bolts and conventional supports are used for roof control at the face, the criteria for a Full Roof Bolting Plan and a Conventional Roof Control Plan should apply with the following modifications:

(a) Any place being driven over 20 feet in width should be supported by a Combination Roof Control Plan.

(b) The roadway should be limited to 16 feet in width on both the straight and the curves to within 10 feet of the uncut face.

(c) A row of posts should be set for each 5 feet of space between the roadway posts and the ribs.

(d) Openings should not exceed 30 feet in width.

§ 75.200–10 Criteria—Spot roof bolting plan.

Spot roof bolting may be used only as a supplement to the approved roof control plan at random locations where adverse roof conditions are encountered. Where spot roof bolting is used, the criteria in § 75.200–7, (a) and (b) of the Full Roof Bolting Plan should apply. In addition, roof bolts should be installed in accordance with roof conditions, but in no case should spacing exceed 4 feet lengthwise and crosswise. Roof bolting should begin under safe roof and continue for the length of the adverse roof condition until safe roof is again encountered.

§ 75.200–11 Criteria—Pillar recovery plan.

Any reduction in pillar size during second mining shall be considered pillar recovery. Second mining is construed to be intentional retreat mining. The following criteria are applicable to pillar recovery roof control plans:

(a) Sections 75.200–7, 75.200–8, and 75.200–9 should apply depending on whether the pillar recovery plan calls for conventional support or a combination of conventional support and roof bolting.

(b) During development, the size and shape of the pillars should be dictated by the depth of cover, height of coal and other conditions associated with the coalbed. The smallest dimension of the pillar should be no less than 20 feet.

(c) Pillar splits and lifts should not exceed 20 feet in width.

(d) A minimum of two rows of breaker posts or the equivalent should be installed on not more than 4-foot centers across each opening leading into pillared areas and such posts should be installed before production is started. Such posts should be installed near the breakline between the lift being started and the gob.

(e) A row of roadside-radius (turn) posts or the equivalent should be installed on not more than 4-foot centers leading into pillar splits, including secondary splits in slabs, wings, or fenders.

(f) The width of the roadway leading from the solid pillars to a final stump (pushout) should not exceed 14 feet. At least two rows of posts or their equivalent should be set on each side of the roadway on not more than 4-foot centers. Only one open roadway leading to a final stump (pushout) should be permitted.

(g) Before full pillar recovery is begun in areas where roof bolts were used as the sole means of roof support and openings are more than 16 feet wide, supplementary support should be installed. Supplementary supports should

consist of at least one row of posts installed on either side on not more than 4-foot centers lengthwise and limit the width of all roadways to 16 feet. These supports should be extended from the entrance to the split for at least one full pillar outby the pillar in which the split is being made.

(h) The following criteria should apply to open end pillaring:

(1) At least two rows of breaker posts or their equivalent should be installed between the lift being started and the gob on not more than 4-foot centers before the initial cut is made and should be extended to within 7 feet of the face. The width of the roadway should not exceed 14 feet.

(2) If the roof in open end pillaring has a tendency to hang, falls should be made, or cribs installed in addition to the breakline posts between the active lift and the hanging area. The cribs should be set not more than 8 feet apart. Heavy duty hydraulic jacks set at centers close enough to give equivalent support may be substituted for cribs, if such jacks are removed remotely.

§ 75.200–12 Criteria—special roof control plan.

A special roof control plan should be adopted and followed when support is installed on an intermittent basis but only at predetermined locations such as at intersections, or when equipment is especially designed to provide either natural or artificial support as the coal is mined. Special roof control plans also cover experimental installations using new devices, materials, and methods for roof support.

(a) The following criteria should apply to mining systems employing continuous mining machines designed to give natural roof support by means of an arched roof:

(1) Where coal roof other than that included in the arch is necessary for roof support, positive means should be used to assure that at least 6 inches of coal roof is maintained at all times. In the event that less than 6 inches of coal roof is encountered, all work in such places should be stopped, the continuous miner withdrawn, and artificial roof support installed. A roof control plan for the support to be installed in such cases must be submitted for approval.

(2) During the development of four-way intersections, the roof between the tangents of the arches in the entry or room should be supported with artificial roof supports prior to the development of the fourth entrance to such intersection.

(3) All areas where the width of openings is to exceed the normal cutting width of the continuous mining machine should be supported with additional support as specified in the roof control plan before any other work is performed in the place.

(4) All areas where the arch is broken, except planned areas such as those covered in subparagraphs (2) and (3) of this paragraph should be considered as having unsupported roof and such roof should have artificial roof supports installed prior to any other work being performed in the area.

(b) The following criteria should apply to mining methods using continuous miners with integral roof bolting equipment where roof bolts are the sole means of roof support:

(1) The distance between roof bolts should not exceed 8 feet crosswise, unless additional material such as wooden planks, wooden beams, or metal straps are installed in conjunction with the roof bolts. Roof bolts installed more than 8 feet but less than 9 feet apart should be supplemented with a wooden plank at least 2 inches thick by 8 inches wide or its equivalent. Roof bolts installed more than 9 feet but less than 10 feet apart should be supplemented with a wooden plank at least 3 inches thick by 8 inches wide or its equivalent. Roof bolts should not be installed more than 10 feet apart.

(2) Work in intersections, pillar splits, or other such places should not be started until additional support has been installed where the roof is supported with only two roof bolts crosswise. Such support should reduce bolt spacing to maximum of 5 feet.

(3) The maximum opening width where the roof is supported by only two roof bolts crosswise should be 16 feet.

(4) The distance between the last row of bolts and the face should not exceed the distance from the head of the machine to the integral roof bolting equipment before starting a continuous miner run.

(c) Before any new support materials, devices or systems are used as a sole means of roof support, their effectiveness should be demonstrated by experimental installations in areas approved by an authorized representative of the Secretary.

§ 75.200–13 Criteria—temporary support.

(a) The following criteria should apply to the installation of temporary supports in faces:

(1) In areas where permanent artificial support is required temporary support should be used until such permanent support is installed.

(2) Only those persons engaged in installing temporary support should be allowed to proceed beyond the last permanent support until such temporary supports are installed.

(3) A minimum of two temporary supports should be installed on not more than 5-foot centers and within 5 feet of the rib or face when work is being done between such support and the nearest rib or face. At least four temporary supports should be installed on not more than 5-foot centers when work is being done in other areas of the face inby the last permanent support. No person should be permitted to proceed beyond temporary support in any direction unless such support is within 5 feet of the rib, face, or permanent support.

(b) During rehabilitation work such as rebolting, installing crossbars, or other permanent roof support, taking down loose roof and cleaning up falls of roof, temporary roof supports should be installed and the following criteria should apply:

(1) Where rebolting work is being done or crossbars are being installed, at least two rows of temporary supports on not more than 5-foot centers should be installed across the place so that the work in progress is done between the installed temporary supports and permanent roof supports installed in sound roof. The distance between the permanent supports and the nearest temporary supports should not exceed 5 feet.

(2) Tools used to take down loose material should be of a design that will enable workmen to perform their duties from a safe position without exposure to falling material. Where loose material is being taken down, a minimum of two temporary supports on centers of not more than 5 feet should be set between the workmen and the material if such work cannot be done from an area supported by permanent roof supports.

(3) Where roof falls have occurred a minimum of four temporary supports shall be set before starting any work in and around the affected area. These supports should be located so as to provide the maximum protection for persons working in the area.

§ 75.200–14 Criteria—roof support recovery.

Any operator who intends to recover roof supports should include a detailed plan for such recovery in the roof control plan. The following criteria should apply to recovery procedures:

(a) Recovery should be done only under the direct supervision of a mine foreman, assistant mine foreman, or section foreman.

(b) Only experienced miners should be assigned to such work.

(c) The person supervising recovery should make a careful examination and evaluation of the roof and designate each support to be recovered.

(d) Supports should not be recovered in the following areas:

(1) Where roof fractures are present or there are other indications of the roof being structurally weak.

(2) Where any second mining has been done.

(3) Where torque readings on roof bolts or visual observations of conventional support indicate excessive loading.

(e) Two rows of temporary supports on not more than 4-foot centers, lengthwise and crosswise, should be set across the place, beginning not more than 4 feet inby the support being recovered. In addition, at least one temporary support should be provided as close as practicable to the support being recovered.

(f) Temporary supports used should not be recovered unless recovery is done remotely from under roof where the permanent supports have not been disturbed and two rows of temporary support, set across the place on 4-foot centers, are maintained at all times between the workmen and the unsupported area.

(g) No one should be permitted to enter any area from which supports have been recovered.

(h) Entrances to the areas from which supports are being recovered should be marked with danger signs placed at conspicuous locations. The danger signs will suffice as long as further support recovery work is being done in the area. If the recovery work is completed or suspended for 3 or more days, the areas should be barricaded.

§ 75.201 Mining methods.

[STATUTORY PROVISIONS]

The method of mining followed in any coal mine shall not expose the miner to unusual dangers from roof falls caused by excessive widths of rooms and entries or faulty pillar recovery methods.

§ 75.201–1 Widths of openings.

(a) The method of mining shall provide widths of openings and pillar dimensions compatible with effective roof control. These widths and dimensions shall be incorporated into the roof control plan submitted for approval.

(b) Where excessive widths result from poor mining practices, additional roof support shall be installed before any travel or other work is done in such area. If excessive widths of openings are a result of coal sloughing, additional support shall be installed and the mining system reevaluated to determine changes that are necessary to minimize such occurrences.

§ 75.201–2 Pillar recovery methods.

In addition to those criteria set forth in § 75.200–11 which may be required in the roof control plan, the following shall apply to pillar recovery:

(a) The overall pillar recovery system shall be designed to minimize the possibility of outbursts or squeezes. The manner and sequence of recovery shall be included in the roof control plan submitted for approval.

(b) Where full pillar recovery is being done, extraction shall be such as to allow total caving of the main roof in the pillared area.

(c) During partial pillar recovery sufficient coal shall be left in place to support the main roof to the extent that the possibility of undue forces overriding the working places will be minimized.

(d) A combination of full and partial pillar recovery shall not be conducted on the same pillar line.

(e) If full extraction of pillars is being done and physical conditions such as standing water, adverse roof conditions, and falls of roof, or law requirements concerning oil and gas wells or surface subsidence dictate that some pillars of coal are to be left in place, a sufficient amount of coal shall be left to support the main roof so as to minimize the possibility of undue forces overriding the working places.

(f) Where full recovery of pillars is planned, the design of the pillars shall be compatible with the planned method of extraction.

(g) Pillaring methods shall eliminate pillar points and pillars that project inby the breakline.

(h) When recovering adjacent pillars left and right from the same opening, mining shall be completed in one such pillar lift and the openings posted off with at least two rows of breaker posts on not more than 4-foot centers before operations are started in the second pillar.

§ 75.201–3 Longwall mining.

Longwall mining shall be considered as a modification of the open-end method of pillar extraction and the support system for the longwall shall be approved on an individual basis.

§ 75.202 Roof support materials.

[STATUTORY PROVISIONS]

The operator, in accordance with the approved plan, shall provide at or near each working face and at such other locations in the coal mines as the Secretary may prescribe an ample supply of suitable materials of proper size with which to secure the roof of all working places in a safe manner. Safety posts, jacks, or other approved devices shall be used to protect the workmen when roof material is being taken down, crossbars are being installed, roof bolt holes are being drilled, roof bolts are being installed, and in such other circumstances as may be appropriate. Loose roof and overhanging or loose faces and ribs shall be taken down or supported. Except in the case of recovery work, supports knocked out shall be replaced promptly.

§ 75.202–1 Adequate supply and location of roof support materials.

The operator shall have an adequate supply of roof support material (including temporary supports) as specified in the approved roof control plan for the type of mining being conducted as close as practical to the working face, but no farther away than the first open crosscut outby the working face unless storing of such supplies in this area poses a hazard to the miner. In such cases supplies shall be stored at an alternate location approved by an authorized representative of the Secretary. Where mining equipment such as roof drilling machines or timbering machines are required to install the supports, such support material may be transported from place to place on the equipment. An adequate supply shall be defined as sufficient material including temporary supports, to support roof exposed by one complete cycle of mining. An additional supply of supplementary roof support materials, such as posts, jacks, crossbars, or different length roof bolts, shall be available in each working section in the event adverse roof conditions, such as water coming from the roof, slips, washouts, wants, roof cracks, are encountered.

§ 75.203 Roof bolt tests.

[STATUTORY PROVISIONS]

When installation of roof bolts is permitted, such roof bolts shall be tested in accordance with the approved roof control plan.

§ 75.203–1 Testing requirements.

The criteria which may be required in the roof control plan for testing installed roof bolts are set forth in § 75.200–7 (b) (3), (ii), and (iii).

§ 75.204 Roof bolt recovery.

[STATUTORY PROVISIONS]

Roof bolts shall not be recovered where complete extractions of pillars are attempted, where adjacent to clay veins, or at the locations of other irregularities, whether natural or otherwise, that induce abnormal hazards. Where roof bolt recovery is permitted, it shall be conducted only in accordance with methods prescribed in the approved roof control plan, and shall be conducted by experienced miners and only where adequate temporary support is provided.

§ 75.204–1 Requirements for roof bolt recovery.

To assure that miners are protected during roof bolt recovery work, the operator shall conform with criteria set forth in § 75.200–14.

§ 75.205 Roof testing.

[STATUTORY PROVISIONS]

Where miners are exposed to danger from falls of roof, face, and ribs the operator shall examine and test the roof, face, and ribs before any work or machine is started, and as frequently thereafter as may be necessary to insure safety. When dangerous conditions are found, they shall be corrected immediately.

Subpart D—Ventilation

§ 75.300 Mechanical ventilation—main fans.

[STATUTORY PROVISIONS]

All coal mines shall be ventilated by mechanical ventilation equipment installed and operated in a manner approved by an authorized representative of the Secretary and such equipment shall be examined daily and a record shall be kept of such examination.

§ 75.300–1 Criteria—For approval of main fan installation and operation.

Sections 75.300–2 through 75.300–3, inclusive, set out the criteria by which Coal Mine Safety District Managers will be guided in approving main fan installation and operation on a mine-by-mine basis. Additional measures may be required. Installation and operating practices not conforming to these criteria may be approved, providing the operator can satisfy the District Manager that the results of such practices will provide no less than the same measure of protection to the miners.

§ 75.300–2 Criteria—Installation of main fans.

(a) Main fans should be:

(1) Installed on the surface.

(2) Installed in fireproof housings and connected to the mine opening with fireproof air ducts.

(3) Equipped with a pressure-recording gage and an automatic signal device

designed to give alarm should the fan slow or stop. The signal from this device should be placed so that it will be seen or heard by a responsible person who is always on duty and can hear or will observe such alarm when men are underground and who should take appropriate action immediately as prescribed in § 75.321 or § 75.300–3(b).

(b) To protect main fans from forces coming out of the mine should an explosion occur:

(1) Main fans should be offset not less than 15 feet from the nearest side of the mine opening, and explosion doors or a weak wall having a cross-sectional area equal to or greater than the connection entry should be provided in direct line with possible explosion forces, or

(2) Main fans may be installed in line with a diversion entry, slope, or shaft (fan entry) driven from the mine air courses to the surface. The surface opening of the fan entry should be no less than 15 feet nor more than 100 feet from the surface opening of the connected mine air course (pressure relief entry). The pressure relief entry opening should be provided with a weak wall or explosion doors in direct line with forces of an explosion originating underground and such weak wall or explosion doors should have a cross-sectional area equal to or greater than the pressure relief entry and cross-sectional area of the pressure relief entry should not be less than that of the fan entry. The underground intersection of the fan entry and pressure relief entry should be no less than 15 feet nor more than 100 feet from the surface opening of the pressure relief entry. The pillar of coal between the pressure relief entry and the fan entry should, regardless of coal bed height, contain not less than 2,500 square feet.

(c) Main fans may be driven either by electric motors or internal combustion engines.

(1) When electric motors are used, they should be provided with a separate power circuit independent of any other mine circuit.

(2) When an internal combustion engine is used the engine should be installed in a fireproof housing, located so as to be protected from possible fuel supply fire or explosions and the engine and exhaust should be located out of direct line with the airstream produced by the fan and be vented to the atmosphere in such a manner that the exhaust gases cannot contaminate the mine intake airstream or any enclosure.

(d) In mines ventilated by multiple force or multiple exhaust main fans, each main fan installation should be equipped with fireproof doors so designed and positioned that in event of the failure of a main fan the doors at the fan will automatically close and prevent air reversal through the fan.

(e) In mines ventilated by a combination of force and exhaust main fans, fireproof automatic closing doors should be installed so that in event of fan failure or stoppage, the doors will automatically close to prevent air reversal that would affect the safety of the miners.

(f) The area surrounding all main fans should be kept free of flammable material for at least 100 feet in all directions.

§ 75.300–3 Criteria—Operation of main fan.

(a) All main fans should be kept in continuous operation except in the event of:

(1) Scheduled maintenance or adjustments on idle days when all men other than those performing evaluation of adjustments are withdrawn from the mine and the mine power is cut off.

(2) Uncontrolled stoppage or fan failure.

(3) Other stoppages, when written permission is obtained from an authorized representative of the Secretary.

(b) If an unusual variance in the mine ventilation pressure is observed, or if an electrical or mechanical deficiency of a main fan is detected, the mine superintendent or assistant mine superintendent or mine foreman should be notified immediately and appropriate action or repairs should be instituted promptly.

(c) Airflow should be maintained in all intake and return air courses of a mine. Where multiple fans are used, neutral areas (areas without perceptible air movement) created by pressure equalization between main fans should not be permitted.

§ 75.300–4 Inspection, examinations, and records.

(a) All main fans shall be inspected daily by a person trained and designated by the operator to make such inspections to insure the electrical and mechanical reliability of such fans.

(b) The fan pressure recording gages shall be examined daily and the charts for such gages shall be changed after completing one revolution.

(c) Automatic closing doors as required in multiple fan systems shall be inspected at least once a month (intervals of not more than 31 days), to insure proper operation.

(d) Results of the inspections shall be recorded in a daily fan inspection book approved by the Secretary.

(e) Records of the daily fan inspections and the fan pressure recording gage charts shall be maintained for a minimum of 1 year and such records and charts shall be made available for inspection by interested persons.

(f) The provisions of paragraphs (b) and (e) of this section with respect to fan pressure recording gages will not be applied when a fan pressure recording gage is not required by the District Manager.

§ 75.301 Air quality, quantity, and velocity.

[Statutory Provisions]

All active workings shall be ventilated by a current of air containing not less than 19.5 volume per centum of oxygen, not more than 0.5 volume per centum of carbon dioxide, and no harmful quantities of other noxious or poisonous gases; and the volume and velocity of the current of air shall be sufficient to dilute, render harmless, and to carry away, flammable, explosive, noxious, and harmful gases, and dust, and smoke and explosive fumes. The minimum quantity of air reaching the last open crosscut in any pair or set of developing entries and the last open crosscut in any pair or set of rooms shall be 9,000 cubic feet a minute, and the minimum quantity of air reaching the intake end of a pillar line shall be 9,000 cubic feet a minute. The minimum quantity of air in any coal mine reaching each working face shall be 3,000 cubic feet a minute. The authorized representative of the Secretary may require in any coal mine a greater quantity and velocity of air when he finds it necessary to protect the health or safety of miners. In robbing areas of anthracite mines, where the air currents cannot be controlled and measurements of the air cannot be obtained, the air shall have perceptible movement.

§ 75.301–1 Quantity of air reaching working face.

A minimum quantity of 3,000 cubic feet a minute of air shall reach each working face from which coal is being cut, mined or loaded and any other working face so designated by the District Manager, in the approved ventilation plan.

§ 75.301–2 Harmful quantities of noxious gases.

Concentrations of noxious or poisonous gases, other than carbon dioxide, shall not exceed the current threshold limit values (TLV) as specified and applied by the American Conference of Governmental Industrial Hygienists. Detectors or laboratory analysis of mine air samples shall be used to determine the concentrations of harmful, noxious or poisonous gases.

§ 75.301–3 Locations of air measurements.

The locations at which the quantity of air shall be measured are as follows:

(a) When a single split of air is used the volume of air shall be measured at the last open crosscut in a pair or set of developing entries or the last open crosscut in any pair or set of rooms which shall be the last crosscut through the line of pillars that separates the intake and return air courses. When the split system of ventilation is used, the volume of air shall be measured in the last open crosscut through the line of pillars that separates the intake and return air courses of each split.

(b) The volume of air at the intake end of a pillar line ventilated by a single split of air, shall be measured in the intake entry furthest from the return air courses and immediately outby the first open crosscut outby the line of pillars being mined. When a split system of ventilation is used, the volume of air shall be measured inby the last intake air split point.

(c) When longwall mining is practiced the volume of air shall be measured in the intake entry or entries at the intake end of the longwall face and the longwall shall be constructed as a pillar line.

(d) The volume of air reaching each working face shall be measured at the inby end of the line brattice or other approved device.

§ 75.301–4 Velocity of air; minimum requirements.

(a) On and after March 30, 1971, except in working places using a blowing system as the primary means of face ventilation or in working places where a lower mean entry air velocity has been determined to be adequate to render harmless and carry away methane and to reduce the level of respirable dust to the lowest attainable level by the Coal Mine Safety District Manager, the minimum mean entry air velocity shall be 60 feet a minute in (1) all working places where coal is being cut, mined, or loaded from the working face with mechanical mining equipment, and (2) in any other working place designated by the Coal Mine Safety District Manager for the district in which the mine is located in which excessive amounts of respirable dust are being generated by any type of mechanical mining equipment.

(b) (1) Except as provided in subparagraph (2) of this paragraph, and except in working places where combination face ventilation systems are employed, the mean entry air velocity of air passing through any room, entry, crosscut, pillar cut, or other working place shall be established as follows:

(i) The quantity of air, when measured at the inby end of the line brattice or other approved device, shall be determined;

(ii) The cross sectional area of the room, entry, crosscut, pillar cut, or other working place, when measured at or near the inby end of the line brattice system or other approved device, less the cross sectional area of the line brattice system or other approved device, shall be determined;

(iii) The air quantity measured in subdivision (i) of this subparagraph shall then be divided by the remaining cross sectional area as determined in subdivision (ii) of this subparagraph and the resulting quotient shall constitute the mean entry air velocity; thus:

$$\frac{\text{i}}{\text{ii}} = \text{V}.$$

(2) When longwall mining is used the mean entry air velocity at the longwall face shall be determined by establishing the total intake air quantity delivered to the longwall face and dividing this quantity by the cross sectional area of the longwall place at the entrance to the longwall face.

(c) The determination of mean entry air velocity may be made either immediately before mining equipment enters a working place or during its presence in such working place and the person making such determination shall use an anemometer or other device approved by the Secretary.

§ 75.302 Ventilation of the working face.

[STATUTORY PROVISIONS]

(a) Properly installed and adequately maintained line brattice or other approved devices shall be continuously used from the last open crosscut of an entry or room of each working section to provide adequate ventilation to the working faces for the miners and to remove flammable, explosive, and noxious gases, dust, and explosive fumes, unless the Secretary or his authorized representative permits an exception to this requirement, where such exception will not pose a hazard to the miners. When damaged by falls or otherwise, such line brattice or other devices shall be repaired immediately.

(b) The space between the line brattice or other approved device and the rib shall be large enough to permit the flow of a sufficient volume and velocity of air to keep the working face clear of flammable, explosive, and noxious gases, dust and explosive fumes.

(c) Brattice cloth used underground shall be of flame-resistant material.

§ 75.302–1 Installation of line brattice and other devices.

(a) Line brattice or any other approved device used to provide ventilation to the working face from which coal is being cut, mined or loaded and other working faces so designated by the Coal Mine Safety Manager, in the approved ventilation plan, shall be installed at a distance no greater than 10 feet from the area of deepest penetration to which any portion of the face has been advanced unless a greater distance is approved by the Coal Mine Safety District Manager of the area in which the mine is located.

(b) When line brattice is used:

(1) The space between the line brattice and the nearest rib shall be sufficiently free of any obstructions such as supplies, equipment or debris to provide for the adequate coursing of air and permit necessary passage through such space; however, this does not exclude the use of auxiliary tubing or ventilation control devices in such space.

(2) Check curtains required in conjunction with the line brattice shall be so installed to minimize air leakage and permit traffic to pass through without adversely affecting face ventilation.

§ 75.302–2 Repair of line brattice.

When the line brattice or other ventilating device is damaged to an extent that ventilation of the working face is inadequate, production activities in the working place shall cease until necessary repairs are made and adequate ventilation restored.

§ 75.302–3 Flame resistant brattice cloth and ventilation tubing.

Brattice cloth (jute or any substitute) and ventilation tubing used underground, shall be flame resistant to the extent that the flame spread index shall be 25 or less except that brattice cloth or ventilation tubing with a flame spread index of 50 or less may be used up until December 30, 1970. The flame spread index shall be determined by ASTM methods of test E–84 or E–162.

§ 75.302–4 Auxiliary fans and tubing.

In the event that auxiliary fans and tubing are used in lieu of or in conjunction with a line brattice system to provide ventilation of the working face:

(a) The fan shall be of a permissible type, maintained in permissible condition, so located and operated to avoid any recirculation of air at any time, and inspected frequently by a certified person when in use.

(1) Fans approved and maintained under Bureau of Mines Schedule 2G or 2F (Part 18 of this chapter) will meet the requirements of this section.

(2) Persons certified under Subpart B of this part will meet the requirements for this section.

(b) In places where auxiliary fans are used, accumulations of methane resulting from unscheduled stoppage of the main fan shall be removed after restoration of normal mine ventilation, by conducting the air current into the place with line brattice or the equivalent. Auxiliary fans shall not be operated in such place during stoppage of normal mine ventilation, and until methane accumulations have been removed.

(c) If the auxiliary fan is stopped or fails, the electrical equipment in the place shall be stopped and the power disconnected at the power source until ventilation in the working place is restored. During such stoppage, the ventilation shall be by means of the primary air current conducted into the place in a manner to prevent accumulation of methane.

(d) In places where auxiliary fans are used, the ventilation during scheduled idle periods such as weekends and idle shifts, shall be by means of the primary air current conducted into the place in a manner to prevent accumulation of methane.

(e) If the air passing through the auxiliary fan or tubing contains 1.0 volume per centum or more of methane, the provisions of § 75.308 shall be applied. Should the requirements of § 75.308 necessitate deenergizing the auxiliary fan, the auxiliary fan shall not be restarted until the methane content in the affected area is less than 1.0 volume per centum and such changes or adjustments have been made to the auxiliary ventilation system as required to insure that the volume of air delivered by the auxiliary system is adequate to maintain the methane content in the auxiliary fan and tubing at less than 1.0 volume per centum.

(f) To insure that an adequate volume and velocity of air is supplied continuously to the working face where auxiliary fan and tubing are used for face ventilation, a line brattice or other approved device shall be installed in accordance with § 75.302–1 before the auxiliary fan is stopped.

(g) All face ventilation systems using auxiliary fans and tubing or machine mounted diffusers shall be approved under the provisions of § 75.316.

§ 75.303 Preshift examination.

[STATUTORY PROVISIONS]

(a) Within 3 hours immediately preceding the beginning of any shift, and before any miner in such shift enters the active workings of a coal mine, certified persons designated by the operator of

the mine shall examine such workings and any other underground area of the mine designated by the Secretary or his authorized representative. Each such examiner shall examine every working section in such workings and shall make tests in each such working section for accumulations of methane with means approved by the Secretary for detecting methane, and shall make tests for oxygen deficiency with a permissible flame safety lamp or other means approved by the Secretary; examine seals and doors to determine whether they are functioning properly; examine and test the roof, face, and rib conditions in such working section; examine active roadways, travelways, and belt conveyors on which men are carried, approaches to abandoned areas, and accessible falls in such section for hazards; test by means of an anemometer or other device approved by the Secretary to determine whether the air in each split is traveling in its proper course and in normal volume and velocity; and examine for such other hazards and violations of the mandatory health or safety standards, as an authorized representative of the Secretary may from time to time require. Belt conveyors on which coal is carried shall be examined after each coal-producing shift has begun. Such mine examiner shall place his initials and the date and time at all places he examines. If such mine examiner finds a condition which constitutes a violation of a mandatory health or safety standard or any condition which is hazardous to persons who may enter or be in such area, he shall indicate such hazardous place by posting a "danger" sign conspicuously at all points which persons entering such hazardous place would be required to pass, and shall notify the operator of the mine. No person, other than an authorized representative of the Secretary or a State mine inspector or persons authorized by the operator to enter such place for the purpose of eliminating the hazardous condition therein, shall enter such place while such sign is so posted. Upon completing his examination, such mine examiner shall report the results of his examination to a person, designated by the operator to receive such reports at a designated station on the surface of the mine, before other persons enter the underground areas of such mine to work in such shift. Each such mine examiner shall also record the results of his examination with ink or indelible pencil in a book approved by the Secretary kept for such purpose in an area on the surface of the mine chosen by the operator to minimize the danger of destruction by fire or other hazard, and the record shall be open for inspection by interested persons.

(b) No person (other than certified persons designated under this § 75.303) shall enter any underground area, except during any shift, unless an examination of such area as prescribed in this § 75.303 has been made within 8 hours immediately preceding his entrance into such area.

§ 75.303–1 Determination of course, volume, velocity of air.

To determine whether the air in each split is traveling in its proper course and in normal volume and velocity, the mine examiner shall use an anemometer or other device approved by the Secretary to measure the velocity and determine the volume of air at the following locations:

(a) The last open crosscut of each pair or set of developing entries;

(b) The last open crosscut of each pair or set of rooms;

(c) The intake end of each pillar line.

§ 75.303–2 Air measurement devices; approval; application for approval.

(a) All devices, other than anemometers, designed and constructed to test air volume or air velocity shall be approved by the Secretary only if such devices are designed and constructed so as not to cause accidents in the use of such equipment.

(b) All devices for testing air volume or air velocity which contain electrical components shall be approved for permissiblity under Bureau of Mines Schedule 2G (Part 18 of this chapter).

(c) Applications for approval of air measurement devices other than anemometers may be submitted to the Bureau of Mines, Approval and Testing, 4800 Forbes Avenue, Pittsburgh, Pa. 15213.

§ 75.304 On-shift examinations for hazardous conditions.

[STATUTORY PROVISIONS]

At least once during each coal-producing shift, or more often if necessary for safety, each working section shall be examined for hazardous conditions by certified persons designated by the operator to do so. Any such conditions shall be corrected immediately. If such condition creates an imminent danger, the operator shall withdraw all persons from the area affected by such conditions to a safe area, except those persons referred to in section 104(d) of the Act, until the danger is abated. Such examination shall include tests for methane with a means approved by the Secretary for detecting methane and for oxygen deficiency with a permissible flame safety lamp or other means approved by the Secretary.

§ 75.304–1 Coal-producing shift.

The term "coal-producing shift" means any shift during which one or more of the following operations are performed: Cutting, blasting, or loading of coal, or the hauling of coal from the face areas, regardless of whether the coal is dumped at a tipple.

§ 75.304–2 Examination of working sections.

Working sections to be examined for hazardous conditions by a certified person under § 75.304 are those working sections in which work is performed in a coal producing shift.

§ 75.304–3 Tests for methane.

Additional tests to determine the methane content in the air in all working sections may be required by the Coal Mine Safety District Manager if necessary for safety and a record shall be kept of all tests. Until December 31, 1970, a permissible flame safety lamp may be used to make tests for methane required by the regulations in this part. On and after December 31, 1970, a methane detector approved by the Secretary shall be used for such tests and a permissible flame safety lamp may be used as a supplementary testing device.

§ 75.305 Weekly examinations for hazardous conditions.

[STATUTORY PROVISIONS]

In addition to the preshift and daily examinations required by this Subpart D, examinations for hazardous conditions, including tests for methane, and for compliance with the mandatory health or safety standards, shall be made at least once each week by a certified person designated by the operator in the return of each split of air where it enters the main return, on pillar falls, at seals, in the main return, at least one entry of each intake and return aircourse in its entirety, idle workings, and, insofar as safety considerations permit, abandoned areas. Such weekly examinations need not be made during any week in which the mine is idle for the entire week, except that such examination shall be made before any other miner returns to the mine. The person making such examinations and tests shall place his initials and the date and time at the places examined, and if any hazardous condition is found, such condition shall be reported to the operator promptly. Any hazardous condition shall be corrected immediately. If such condition creates an imminent danger, the operator shall withdraw all persons from the area affected by such condition to a safe area, except those persons referred to in section 104(d) of the Act, until such danger is abated. A record of these examinations, tests, and actions taken shall be recorded in ink or indelible pencil in a book approved by the Secretary kept for such purpose in an area on the surface of the mine chosen by the mine operator to minimize the danger of destruction by fire or other hazard, and the record shall be open for inspection by interested persons.

§ 75.305–1 Intervals of examination.

Examinations as required by § 75.305 shall be made at least once each week and the phrase "once each week" shall mean at intervals not exceeding 7 days rather than at any time during each calendar week.

§ 75.305–2 Tests for methane.

Until December 31, 1970, a permissible flame safety lamp may be used to make tests for methane required by the regulations in this part. On and after December 31, 1970, a methane detector approved

by the Secretary shall be used for such tests and a permissible flame safety lamp may be used as a supplementary testing device.

§ 75.306 Weekly ventilation examinations.

[STATUTORY PROVISIONS]

At least once each week, a qualified person shall measure the volume of air entering the main intakes and leaving the main returns, the volume passing through the last open crosscut in any pair or set of developing entries and the last open crosscut in any pair or set of rooms, the volume and, when the Secretary so prescribes, the velocity reaching each working face, the volume being delivered to the intake end of each pillar line, and the volume at the intake and return of each split of air. A record of such measurements shall be recorded in ink or indelible pencil in a book approved by the Secretary kept for such purpose in an area on the surface of the coal mine chosen by the operator to minimize the danger of destruction by fire or other hazard, and the record shall be open for inspection by interested persons.

§ 75.306–1 Qualified person.

The air measurements required by § 75.306 shall be made by a qualified person as defined in § 75.152, using an anemometer or other device approved by the Secretary.

§ 75.306–2 Intervals of examinations.

The phrase "once each week" shall mean at intervals not exceeding 7 days rather than at any time during each calendar week.

§ 75.307 Methane examinations.

[STATUTORY PROVISIONS]

At the start of each shift, tests for methane shall be made at each working place immediately before electrically operated equipment is energized. Such tests shall be made by qualified persons. If 1.0 volume per centum or more of methane is detected, electrical equipment shall not be energized, taken into, or operated in, such working place until the air therein contains less than 1.0 volume per centum of methane. Examinations for methane shall be made during the operation of such equipment at intervals of not more than 20 minutes during each shift, unless more frequent examinations are required by an authorized representative of the Secretary. In conducting such tests, such person shall use means approved by the Secretary for detecting methane.

§ 75.307–1 Methane examinations at face.

An examination for methane shall be made at the face of each working place during each shift and immediately prior to the entry of such electrical equipment into any working place. Until December 31, 1970, a permissible flame safety lamp may be used to make tests for methane required by the regulations in this part. On and after December 31, 1970, a methane detector approved by the Secretary shall be used for such tests and a permissible flame safety lamp may be used as a supplementary testing device.

§ 75.308 Methane accumulations in face areas.

[STATUTORY PROVISIONS]

If at any time the air at any working place, when tested at a point not less than 12 inches from the roof, face, or rib, contains 1.0 volume per centum or more of methane, changes or adjustments shall be made at once in the ventilation in such mine so that such air shall contain less than 1.0 volume per centum of methane. While such changes or adjustments are underway and until they have been achieved, power to electric face equipment located in such place shall be cut off, no other work shall be permitted in such place, and due precautions shall be carried out under the direction of the operator or his agent so as not to endanger other areas of the mine. If at any time such air contains 1.5 volume per centum or more of methane, all persons, except those referred to in section 104(d) of the Act, shall be withdrawn from the area of the mine endangered thereby to a safe area, and all electric power shall be cut off from the endangered area of the mine, until the air in such working place shall contain less than 1.0 volume per centum of methane.

§ 75.308–1 Changes or adjustments in ventilation.

The "changes or adjustments" which shall be made in the ventilation means increasing the quantity or improving the distribution of air in the affected working place to the extent sufficient to reduce and maintain the methane content less than 1.0 volume per centum when operations are resumed.

§ 75.308–2 Tests for methane.

Until December 31, 1970, a permissible flame safety lamp may be used to make tests for methane required by the regulations in this part. On and after December 31, 1970, a methane detector approved by the Secretary shall be used for such tests and a permissible flame safety lamp may be used as a supplementary testing device.

§ 75.309 Return air; tests and adjustments.

[STATUTORY PROVISIONS]

(a) If, when tested, a split of air returning from any working section contains 1.0 volume per centum or more of methane, changes or adjustments shall be made at once in the ventilation in the mine so that such returning air shall contain less than 1.0 volume per centum of methane. Tests under this § 75.309 shall be made at 4-hour intervals during each shift by a qualified person designated by the operator of the mine. In making such tests, such person shall use means approved by the Secretary for detecting methane.

(b) If, when tested, a split of air returning from any working section contains 1.5 volume per centum or more of methane, all persons except those persons referred to in section 104(d) of the Act, shall be withdrawn from the area of the mine endangered thereby to a safe area and all electric power shall be cut off from the endangered area of the mine, until the air in such split shall contain less than 1.0 volume per centum of methane.

§ 75.309–1 Tests for methane.

Until December 31, 1970, a permissible flame safety lamp may be used to make tests for methane as required by the regulations in this part. On and after December 31, 1970, a methane detector approved by the Secretary shall be used for such tests and a permissible flame safety lamp may be used as a supplementary testing device.

§ 75.309–2 Location of methane test.

The methane content in a split of air returning from any working section shall be measured at such point or points where methane may be present in the air current in such split between the last working place of the working section ventilated by the split and the junction of such split with another airsplit or the location at which such split is used to ventilate seals or abandoned areas. Tests to determine the methane content of such split shall be made at a point not less than 12 inches from the roof or ribs.

§ 75.309–3 Changes or adjustments in ventilation.

The "changes or adjustments" which shall be made in the ventilation means increasing the quantity of air in the affected split or improving the distribution of air in the working section to the extent that the methane content in the affected split is reduced and maintained less than 1.0 volume per centum.

§ 75.309–4 Record of tests.

The results of such tests shall be recorded in the daily record book located on the surface.

§ 75.310 Methane in virgin territory.

[STATUTORY PROVISIONS]

In virgin territory, if the quantity of air in a split ventilating the active workings in such territory equals or exceeds twice the minimum volume of air prescribed in § 75.301 for the last open crosscut, if the air in the split returning from such workings does not pass over trolley wires or trolley feeder wires, and if a certified person designated by the operator is continually testing the methane content of the air in such split during mining operations in such workings, it shall be necessary to withdraw all persons, except those referred to in section 104(d) of the Act, from the area of the mine endangered thereby to a safe area and all electric power shall be cut off from the endangered area only when the air returning from such workings contains 2.0 volume per centum or more of methane.

§ 75.310–1 Virgin territory.

The term "virgin territory" means that area of a mine that is being penetrated for the first time, is not surrounded on all sides by previous mining, and is of such extent that there has not been sufficient mining to reduce the amount of methane liberated during the extraction process.

§ 75.310–2 Tests for methane.

Until December 31, 1970, a permissible flame safety lamp may be used to make tests for methane required by the regulations in this part. On and after December 31, 1970, a methane detector approved by the Secretary shall be used for such tests and a permissible flame safety lamp may be used as a supplementary testing device.

§ 75.310–3 Location of methane tests.

The methane content in a split of air returning from any active workings of a mine shall be measured at such point or points where methane may be present in the air current in such split between the last working place ventilated by the split and the junction of such split with another air split or at a point where such split is used to ventilate seals or abandoned areas. Tests to determine the methane content of such split shall be made at a point not less than 12 inches from the roof or ribs.

§ 75.311 Air passing opening of abandoned areas.

[STATUTORY PROVISIONS]

Air which has passed by an opening of any abandoned area shall not be used to ventilate any working place in the coal mine if such air contains 0.25 volume per centum or more of methane. Examinations of such air shall be made during the preshift examination required by § 75.303. In making such tests, a certified person designated by the operator shall use means approved by the Secretary for detecting methane. For the purposes of this § 75.311, an area within a panel shall not be deemed to be abandoned until such panel is abandoned.

§ 75.311–1 Approved means for detecting methane.

Tests to determine whether the air contains 0.25 volume per centum or more methane, shall be made with a methane detector approved by the Secretary.

§ 75.312 Air passing through abandoned, inaccessible, or robbed area.

[STATUTORY PROVISIONS]

Air that has passed through an abandoned area or an area which is inaccessible or unsafe for inspection shall not be used to ventilate any working place in any mine. No air which has been used to ventilate an area from which the pillars have been removed shall be used to ventilate any working place in a mine, except that such air, if it does not contain 0.25 volume per centum or more of methane, may be used to ventilate enough advancing working places immediately adjacent to the line of retreat to maintain an orderly sequence of pillar recovery on a set of entries.

§ 75.312–1 Pillared areas.

The phrase "an area from which the pillars have been removed" includes the area where second mining has been done regardless of the amount of recovery obtained. Second mining is construed to be intentional retreat mining.

§ 75.312–2 Tests for methane.

Tests to determine whether the air contains 0.25 volume per centum or more methane shall be made with a methane detector approved by the Secretary, and such test shall be made in the intake air current at a point between the area from which pillars have been removed and the adjacent working places.

§ 75.313 Methane monitor.

[STATUTORY PROVISIONS]

The Secretary or his authorized representative shall require, as an additional device for detecting concentrations of methane, that a methane monitor, approved as reliable by the Secretary after March 30, 1970, be installed, when available, on any electric face cutting equipment, continuous miner, longwall face equipment, and loading machine, except that no monitor shall be required to be installed on any such equipment prior to the date on which such equipment is required to be permissible under §§ 75.500, 75.501, and 75.504. When installed on any such equipment, such monitor shall be kept operative and properly maintained and frequently tested as prescribed by the Secretary. The sensing device of such monitor shall be installed as close to the working face as practicable. Such monitor shall be set to deenergize automatically such equipment when such monitor is not operating properly and to give a warning automatically when the concentration of methane reaches a maximum percentage determined by an authorized representative of the Secretary which shall not be more than 1.0 volume per centum of methane. An authorized representative of the Secretary shall require such monitor to deenergize automatically equipment on which it is installed when the concentration of methane reaches a maximum percentage determined by such representative which shall not be more than 2.0 volume per centum of methane.

§ 75.313–1 Methane monitors, maintenance.

The operator of any mine in which methane monitors are installed on any equipment shall establish and adopt a definite maintenance program designed to keep such monitors operative and a written description of such program shall be available for inspection. At least once each month the methane monitors shall be checked for operating accuracy with a known methane-air mixture and shall be calibrated as necessary. A record of calibration tests shall be kept in a book approved by the Secretary.

§ 75.313–2 Methane monitors; determination of reliability.

The methane monitors listed below are approved as reliable for detecting concentrations of methane.

Manufacturer	Part No.	Type of power
Bacharach Instrument Co.	23–7052	120v. AC.
Do	23–7090	240v. AC.
Do	23–7091	440v. AC.
Do	23–7092	480v. AC.
Do	23–7093	550v. AC.
Do	23–7053	200–350v. DC.
Mine Safety Appliances Co.	08–95100	110–120v. AC 50–60 Hz. 220–240v. AC 50–60 Hz. 440–480v. AC 50–60 Hz. 500–600v. AC 50–60 Hz. 275v. DC to be used with "MineSpot" cap lamp battery. 550v. DC to be used with "MineSpot" cap lamp battery.
Do	08–456400	Do.
Do	08–456960	Do.

§ 75.314 Inspection of idle and abandoned areas.

[STATUTORY PROVISIONS]

Idle and abandoned areas shall be inspected for methane and for oxygen deficiency and other dangerous conditions by a certified person with means approved by the Secretary as soon as possible but not more than 3 hours before other persons are permitted to enter or work in such areas. Persons, such as pumpmen, who are required regularly to enter such areas in the performance of their duties, and who are trained and qualified in the use of means approved by the Secretary for detecting methane and in the use of a permissible flame safety lamp or other means approved by the Secretary for detecting oxygen deficiency are authorized to make such examinations for themselves, and each such person shall be properly equipped and shall make such examinations upon entering any such area.

§ 75.314–1 Test for methane.

Until December 31, 1970, a permissible flame safety lamp may be used to make tests for methane required by the regulations in this part. On and after December 31, 1970, a methane detector approved by the Secretary shall be used for such tests and a permissible flame safety lamp may be used as a supplemental testing device.

§ 75.315 Examinations before intentional roof fall.

[STATUTORY PROVISIONS]

Immediately before an intentional roof fall is made, pillar workings shall be examined by a qualified person designated by the operator to ascertain whether methane is present. Such person shall use means approved by the Secretary for detecting methane. If in such examination, methane is found in amounts of 1.0 volume per centum or more, such roof fall shall not be made until changes or adjustments are made in the ventilation so that the air shall contain less than 1.0 volume per centum of methane.

§ 75.315–1 Test for methane.

Until December 31, 1970, a permissible flame safety lamp may be used to make tests for methane required by the regulations in this part. On and after December 31, 1970, a methane detector approved by the Secretary shall be used for such tests and a permissible flame

safety lamp may be used as a supplemental testing device.

§ 75.316 Ventilation system and methane and dust control plan.

[STATUTORY PROVISIONS]

A ventilation system and methane and dust control plan and revisions thereof suitable to the conditions and the mining system of the coal mine and approved by the Secretary shall be adopted by the operator and set out in printed form on or before June 28, 1970. The plan shall show the type and location of mechanical ventilation equipment installed and operated in the mine, such additional or improved equipment as the Secretary may require, the quantity and velocity of air reaching each working face, and such other information as the Secretary may require. Such plan shall be reviewed by the operator and the Secretary at least every 6 months.

§ 75.316–1 Information to be submitted by operator.

The operator shall submit to the Coal Mine Safety District Manager in whose district such mine is located, the following:

(a) An accurate up-to-date map of the coal mine at a scale of not more than 500 feet to the inch and supporting data which shall include:

(1) The limits of the mine property including all known underground workings bordering the mine above and below and on adjacent properties.

(2) The location of all oil and gas wells.

(3) The location of all surface installed fans, type of fan, manufacturer's name, size of fan, and complete current operating specifications.

(4) Location of all surface mine openings.

(5) Any abnormal conditions or reservations, such as faults which may affect mine ventilation system design.

(6) Projections of anticipated mine development for at least 1 year.

(7) Direction and volume of air at each surface mine opening.

(8) All underground workings with the active working sections delineated.

(9) Location of all stoppings, overcasts, undercasts, regulators, seals, and ventilating and man doors.

(10) The volume of air entering and leaving each split, passing through the last open crosscut in each set of entries and rooms, at the intake end of each pillar line, and at each working face.

(11) The velocity of the air current, when such velocity is required at each working face, in all conveyor belt haulage entries, where trolley haulage systems are maintained, and where trolley wires and trolley feeder wires are installed.

(12) Average entry height in conveyor belt and trolley haulage systems.

(13) Areas which have been abandoned and areas from which pillars have been wholly or partially removed.

(b) A ventilation system and methane and dust control plan which shall show in detail:

(1) The methane and dust control practices along all haulageways and travelways, at all transfer points, at underground crushers and dumps, in all active working places and in such other areas as may be required by such District Manager.

(2) All face ventilation systems used and drawings illustrating system use, anticipated air quantities and velocities in the working place and the use and application of the system under all anticipated mining conditions.

(3) When auxiliary face ventilation systems are used, a detailed plan of such system including equipment specifications, fan capacity, method of application, and methods to be used for maintaining continuous airflow to the working face in event of auxiliary equipment failure.

(4) The bleeder entry system, when such system is used including:

(i) Methods for maintaining the bleeder entries free of obstructions such as roof falls and standing water.

(ii) Ventilating devices such as regulators, stoppings and bleeder connectors used to control air movement through the gob bleeder entries.

§ 75.316–2 Criteria for approval of ventilation system and methane and dust control plan.

This section sets out the criteria by which District Managers will be guided in approving a ventilation system and dust control plan on a mine-by-mine basis. Additional measures may be required. A ventilation system and dust control plan not conforming to these criteria may be approved, providing the operator can satisfy the District Manager that the results of such ventilation system and dust control plan will provide no less than the same measure of protection to the miners.

(a) In mines using multiple main fans, the ventilation system should be so arranged that no adverse air reversal will occur, should failure or stoppage of any main fan or fans occur.

(b) Permanent stoppings, overcasts, undercasts, and shaft partitions should be constructed of substantial, incombustible material, such as concrete, concrete blocks, cinder block, brick or tile, or some other incombustible material having sufficient strength to serve the purpose for which the stopping or partition is intended. In heavy or caving areas, timbers laid longitudinally "skin to skin" may be used. Such permanent stoppings should be erected between the intake and return aircourses in entries and should be maintained to and including the third connecting crosscut outby the faces of the entries. Permanent stoppings should be used to separate belt haulage entries from entries used as intake an return aircourses.

(c) A crosscut should be provided at or near the face of each entry or room before the place is abandoned.

(d) The methane content in any return aircourse other than an aircourse returning the split of air from a working section (as provided in §§ 75.309 and 75.310) should not exceed 2.0 volume per centum. The methane content in the air in active workings shall be less than 1.0 volume per centum. If, at any time, the air in any active working contains 1.0 volume per centum or more of methane, changes or adjustments shall be made at once in the ventilation in the mine so that air shall contain less than 1.0 volume per centum of methane.

(e) Bleeder entries, bleeder systems, or equivalent means should be used in all active pillaring areas to ventilate the mined areas from which the pillars have been wholly or partially extracted, so as to control the methane content in such areas. Bleeder entries or bleeder systems established after June 28, 1970, should conform with the requirements of this § 75.316–2.

(1) Bleeder entries shall be defined as special aircourses developed and maintained as part of the mine ventilation system and designed to continuously move air-methane mixtures from the gob, away from active workings and deliver such mixtures to the mine return aircourses. Bleeder entries should be connected to those areas from which pillars have been wholly or partially extracted at strategic locations in such a way to control airflow through such gob area, to induce drainage of gob gas from all portions of such gob areas and to minimize the hazard from expansion of gob gases due to atmospheric pressure change.

(2) Bleeder systems shall include any combination of bleeder entries, bleeder entry connections to any area from which pillars are wholly or partially extracted and all associated ventilation control devices. Such systems should extend from active pillar line of such gob to the intersection of that bleeder split with any other split of air, and shall not include active workings.

(f) (1) Bleeder entries developed after June 28, 1970, should be adequately maintained and free of water to permit safe travel or, if such bleeder entries cannot be traveled without exposing the mine examiner to undue hazard, such bleeder system should be designed and maintained so that bleeder entry performance can be evaluated for adequacy and continuity by a means approved by the Coal Mine Safety District Manager.

(2) When the mine operator deems that safe examination can be made such examination should be made at least once each week by a certified person designated by the operator to do so and the results of such examinations shall be recorded in a book as prescribed in § 75.305. The certified person shall place his initials, the time and the date at as many locations in the bleeder entries as are necessary to indicate that the entire length has been examined.

(3) When bleeder entry travel is considered unsafe the evaluation of bleeder entry performance should be adequate to indicate that the bleeder system is functioning as specified in § 75.316–3 (e) (1) and shall be made at least once each week by a certified person or persons and the results shall be recorded in a book as prescribed in § 75.305. To protect the safety of the miners when bleeder entry performance evaluation requires altering the normal airflow through the affected area, such evaluation should be made during idle shifts

with power cut off from the affected area. Due precaution should be taken so as not to endanger any other area of the mine and suitable examinations for methane should be made at the edges of the pillar and such other places as may be required.

(g) The ventilation pressure differential between the active pillar line and the junction of any bleeder connection to the bleeder entries of such system should at all times be adequate to insure gob gas drainage to the bleeder entries. The pressure differential shall be considered adequate when perceptible air-flow exists in all open or regulated bleeder connections, as determined with chemical smoke or other approved means.

(h) The methane content of the air current in the bleeder split at the point where such split enters any other air split should not exceed 2.0 volume per centum.

(i) When the return aircourses from all or part of the bleeder entries of a gob area and air other than that used to ventilate the gob area is passing through the return aircourses, the bleeder connectors between the return air courses and the gob shall be considered as bleeder entries and the concentration of methane should not exceed 2.0 volume per centum at the intersection of the bleeder connectors and the return aircourses.

§ 75.317 Maintenance of detecting devices.

[STATUTORY PROVISIONS]

Each operator shall provide for the proper maintenance and care of the permissible flame safety lamp or any other approved device for detecting methane and oxygen deficiency by a person trained in such maintenance, and, before each shift, care shall be taken to insure that such lamp or other device is in a permissible condition.

§ 75.318 Pillar recovery without bleeder system.

[STATUTORY PROVISIONS]

Where areas are being pillared on March 30, 1970, without bleeder entries, or without bleeder systems or any equivalent means, pillar recovery may be completed in the area, to the extent approved by an authorized representative of the Secretary, if the edges of pillar lines adjacent to active workings are ventilated with sufficient air to keep the air in open areas along the pillar lines below 1.0 volume per centum of methane.

§ 75.319 Ventilation of mechanized mining sections.

[STATUTORY PROVISIONS]

Each mechanized mining section shall be ventilated with a separate split of intake air directed by overcasts, undercasts, or the equivalent, except an extension of time, not in excess of 9 months, may be permitted by the Secretary, under such conditions as he may prescribe, whenever he determines that this subsection cannot be complied with on March 30, 1970.

§ 75.319-1 Mechanized mining section.

The term "mechanized mining section" means an area of a mine in which coal is mined with one set of production equipment, characterized in a conventional mining section by a single loading machine, or in a continuous mining section by a single continuous mining machine, and which is comprised of a number of contiguous working places. Specialized mining sections, such as longwall mining sections, which utilize equipment other than specified in this section, may, if approved by the Coal Mine Safety District Manager, be ventilated by a single split of air.

§ 75.320 Examination for methane before blasting.

[STATUTORY PROVISIONS]

In all underground areas of a coal mine, immediately before firing each shot or group of multiple shots and after blasting is completed, examinations for methane shall be made by a qualified person with means approved by the Secretary for detecting methane. If methane is found in amounts of 1.0 volume per centum or more, changes or adjustments shall be made at once in the ventilation so that the air shall contain less than 1.0 volume per centum of methane. No shots shall be fired until the air contains less than 1.0 volume per centum of methane.

§ 75.321 Stoppage of fans, plans.

[STATUTORY PROVISIONS]

Each operator shall adopt a plan on or before May 29, 1970, which shall provide that when any mine fan stops, immediate action shall be taken by the operator or his agent (a) to withdraw all persons from the working sections, (b) to cut off the power in the mine in a timely manner, (c) to provide for restoration of power and resumption of work if ventilation is restored within a reasonable period as set forth in the plan after the working places and other active workings where methane is likely to accumulate are reexamined by a certified person to determine if methane in amounts of 1.0 volume per centum or more exists therein, and (d) to provide for withdrawal of all persons from the mine if ventilation cannot be restored within such reasonable time. The plan and revisions thereof approved by the Secretary shall be set out in printed form and a copy shall be furnished to the Secretary or his authorized representative.

§ 75.321-1 Reasonable period.

Unless a different period of time is approved by the Coal Mine Safety District Manager, "reasonable period" referred to in § 75.321 means a time lapse of not more than 15 minutes.

§ 75.322 Change in ventilation.

[STATUTORY PROVISIONS]

Changes in ventilation which materially affect the main air current or any split thereof and which may affect the safety of persons in the coal mine shall be made only when the mine is idle. Only those persons engaged in making such changes shall be permitted in the mine during the change. Power shall be removed from the areas affected by the change before work starts to make the change and shall not be restored until the effect of the change has been ascertained and the affected areas determined to be safe by a certified person.

§ 75.323 Countersigning of reports.

[STATUTORY PROVISIONS]

The mine foreman shall read and countersign promptly the daily reports of the preshift examiner and assistant mine foreman, and he shall read and countersign promptly the weekly report covering the examinations for hazardous conditions. Where such reports disclose hazardous conditions, they shall be corrected promptly. If such conditions create an imminent danger, the operator shall withdraw all persons from, or prevent any person from entering, as the case may be, the area affected by such conditions, except those persons referred to in section 104(d) of the Act, until such danger is abated. The mine superintendent or assistant superintendent of the mine shall also read and countersign the daily and weekly reports of such persons.

§ 75.324 Reports by mine foremen.

[STATUTORY PROVISIONS]

Each day, the mine foreman and each of his assistants shall enter plainly and sign with ink or indelible pencil in a book approved by the Secretary provided for that purpose a report of the condition of the mine or portion thereof under his supervision, which report shall state clearly the location and nature of any hazardous condition observed by him or reported to him during the day and what action was taken to remedy such condition. Such book shall be kept in an area on the surface of the mine chosen by the operator to minimize the danger of destruction by fire or other hazard, and shall be open for inspection by interested persons.

§ 75.325 Reopening mines.

[STATUTORY PROVISIONS]

Before a coal mine is reopened after having been abandoned or declared inactive by the operator, the Secretary shall be notified, and an inspection shall be made of the entire mine by an authorized representative of the Secretary before mining operations commence.

§ 75.326 Aircourses and belt haulage entries.

[STATUTORY PROVISIONS]

In any coal mine opened after March 30, 1970, the entries used as intake and return air courses shall be separated from belt haulage entries, and each operator of such mine shall limit the velocity of the air coursed through belt haulage entries to the amount necessary to provide an adequate supply of oxygen in such entries, and to insure that the air therein shall contain less than 1.0 volume per centum of methane, and such

air shall not be used to ventilate active working places. Whenever an authorized representative of the Secretary finds, in the case of any coal mine opened on or prior to March 30, 1970, which has been developed with more than two entries, that the conditions in the entries, other than belt haulage entries, are such as to permit adequately the coursing of intake or return air through such entries, (a) the belt haulage entries shall not be used to ventilate, unless such entries are necessary to ventilate, active working places, and (b) when the belt haulage entries are not necessary to ventilate the active working places, the operator of such mine shall limit the velocity of the air coursed through the belt haulage entries to the amount necessary to provide an adequate supply of oxygen in such entries, and to insure that the air therein shall contain less than 1.0 volume per centum of methane.

§ 75.327 Air courses and trolley haulage systems.

[STATUTORY PROVISIONS]

In any coal mine opened on or after March 30, 1970, or, in the case of a coal mine opened prior to such date, in any new working section of such mine, where trolley haulage systems are maintained and where trolley wires or trolley feeder wires are installed, an authorized representative of the Secretary shall require a sufficient number of entries or rooms as intake aircourses in order to limit, as prescribed by the Secretary, the velocity of air currents on such haulageways for the purpose of minimizing the hazards associated with fires and dust explosions in such haulageways.

§ 75.327–1 Velocity of air.

Unless a higher velocity is approved by the Coal Mine Safety District Manager, the velocity of the air current in the trolley haulage entries shall be limited to not more than 250 feet a minute. A higher air velocity may be required to limit the methane content in such haulage entries or elsewhere in the mines to less than 1.0 per centum and provide an adequate supply of oxygen.

§ 75.328 Ventilation during pillar extraction.

[STATUTORY PROVISION]

While pillars are being extracted in any area of a coal mine, such area shall be ventilated in the manner prescribed by this Subpart D "Ventilation."

§ 75.329 Bleeder systems.

[STATUTORY PROVISION]

On or before December 30, 1970, all areas from which pillars have been wholly or partially extracted and abandoned areas, as determined by the Secretary or his authorized representative, shall be ventilated by bleeder entries or by bleeder systems or equivalent means, or be sealed, as determined by the Secretary or his authorized representative. When ventilation of such areas is required, such ventilation shall be maintained so as continuously to dilute, render harmless, and carry away methane and other explosive gases within such areas and to protect the active workings of the mine from the hazards of such methane and other explosive gases. Air coursed through underground areas from which pillars have been wholly or partially extracted which enters another split of air shall not contain more than 2.0 volume per centum of methane, when tested at the point it enters such other split. When sealing is required, such seals shall be made in an approved manner so as to isolate with explosion-proof bulkheads such areas from the active workings of the mine.

§ 75.329–1 Sealing or ventilation of pillared or abandoned area.

(a) All areas of a coal mine from which the pillars have been wholly or partially extracted and abandoned areas shall be ventilated or sealed by December 30, 1970. For those coal mines in which ventilation can be maintained so as to continuously dilute, render harmless and carry away methane and other exlosive gases within such areas and to protect the active workings of the mine from hazards of such methane and other explosive gases, the operator shall request permission from the Coal Mine Safety District Manager in whose district the mine is located to ventilate such areas.

(b) The request for permission to ventilate such areas must be submitted in time to allow consideration of the request, to obtain approval, and to permit the operator to install the ventilation system, or to install seals in the event the request to ventilate is denied, on or before December 30, 1970.

(c) The determination of whether ventilation will be permitted will be made after taking into consideration the history of methane and other explosive gases in the mine, the size of the gob or abandoned areas, and if the areas can be ventilated adequately.

(d) To be considered for approval the request shall contain the following information provided by the mine operator.

(1) Name of mine and company.

(2) Location of mine (town, county, State).

(3) Operator's name and address.

(4) Date of application.

(5) A detailed history of the methane content determined throughout the mine and when available, the volume of air in which such methane determinations were made, to support the operator's application to ventilate.

(e) A description of the method by which the areas from which the pillars have been wholly or partially extracted and abandoned areas shall be ventilated and such maps and drawings as may be required to illustrate such method and to indicate existing or proposed air volumes used to ventilate such areas.

(f) The signature and title of the person who submits the application for the operator.

§ 75.329–2 Construction of seals or bulkheads.

Pending the development and publication of definitive specifications for explosion-proof seals or bulkheads, such seals or bulkheads may be constructed of solid, substantial, and incombustible materials such as concrete, brick, cinder block, or tile, or the equivalent, sufficient to prevent an explosion which may occur in the atmosphere on one side of the seal or bulkhead from propagating to the atmosphere on the other side; provided, however, that upon publication of definitive specifications, all such seals or bulkheads, including those in place at the time of such publication, shall be required to meet or exceed those specifications.

§ 75.330 Sealing abandoned sections.

[STATUTORY PROVISIONS]

In the case of mines opened on or after March 30, 1970, or in the case of working sections opened on or after such date in mines open prior to such date, the mining system shall be designed in accordance with a plan and revisions thereof approved by the Secretary and adopted by such operator so that, as each working section of the mine is abandoned, it can be isolated from the active workings of the mine with explosion-proof seals or bulkheads.

§ 75.330–1 Plan for sealing abandoned sections.

For approval the plan for isolating each set of cross entries, room entries, or panel entries shall include the following:

(a) A mine map at a scale not more than 500 feet to the inch which is sufficiently detailed to illustrate the mining system employed, depth of cover and dimensions of barrier pillars left in place bordering such areas, the proximity of all active workings, and the proposed location and sequence of construction of all necessary mine seals required, when mining is completed in a mining area. Such map shall illustrate the location of such mine seals as may be required should mining conditions necessitate abandonment of a mining area prior to the scheduled completion date.

(b) A detailed drawing or drawings of proposed explosion-proof seal construction which shall meet the requirements of § 75.329–2. Such drawings shall show the pillars in which the seals will be erected and such pillars shall be of sufficient size and number to protect the seals.

Subpart E—Combustible Materials and Rock Dusting

§ 75.400 Accumulation of combustible materials.

[STATUTORY PROVISION]

Coal dust, including float coal dust deposited on rock-dusted surfaces, loose coal, and other combustible materials, shall be cleaned up and not be permitted to accumulate in active workings, or on electric equipment therein.

§ 75.400–1 Definitions.

(a) The term "coal dust" means particles of coal that can pass a No. 20 sieve.

(b) The term "float coal dust" means the coal dust consisting of particles of coal that can pass a No. 200 sieve.

(c) The term "loose coal" means coal fragments larger in size than coal dust.

§ 75.400–2 Cleanup program.

A program for regular cleanup and removal of accumulations of coal and float coal dusts, loose coal, and other combustibles shall be established and maintained. Such program shall be available to the Secretary or authorized representative.

§ 75.401 Abatement of dust; water or water with a wetting agent.

[STATUTORY PROVISION]

Where underground mining operations in active workings create or raise excessive amounts of dust, water or water with a wetting agent added to it, or other no less effective methods approved by the Secretary or his authorized representative, shall be used to abate such dust. In working places, particularly in distances less than 40 feet from the face, water, with or without a wetting agent, or other no less effective methods approved by the Secretary or his authorized representative, shall be applied to coal dust on the ribs, roof, and floor to reduce dispersibility and to minimize the explosion hazard.

§ 75.401–1 Excessive amounts of dust.

The term "excessive amounts of dust" means coal and float coal dust in the air in such amounts as to create the potential of an explosion hazard.

§ 75.402 Rock dusting.

[STATUTORY PROVISION]

All underground areas of a coal mine, except those areas in which the dust is too wet or too high in incombustible content to propagate an explosion, shall be rock dusted to within 40 feet of all working faces, unless such areas are inaccessible or unsafe to enter or unless the Secretary or his authorized representative permits an exception upon his finding that such exception will not pose a hazard to the miners. All crosscuts that are less than 40 feet from a working face shall also be rock dusted.

§ 75.402–1 Definition.

The term "too wet" means that sufficient natural moisture is retained by the dust that when a ball of finely divided material is squeezed in the hands water is exuded.

§ 75.402–2 Exceptions.

Exceptions granted under § 75.402 by the Secretary or his authorized representative shall be reviewed periodically.

§ 75.403 Maintenance of incombustible content of rock dust.

[STATUTORY PROVISION]

Where rock dust is required to be applied, it shall be distributed upon the top, floor, and sides of all underground areas of a coal mine and maintained in such quantities that the incombustible content of the combined coal dust, rock dust, and other dust shall be not less than 65 per centum, but the incombustible content in the return aircourses shall be no less than 80 per centum. Where methane is present in any ventilating current, the per centum of incombustible content of such combined dusts shall be increased 1.0 and 0.4 per centum for each 0.1 per centum of methane where 65 and 80 per centum, respectively, of incombustibles are required.

§ 75.403–1 Incombustible content.

Moisture contained in the combined coal dust, rock dust and other dusts shall be considered as a part of the incombustible content of such mixture.

§ 75.404 Exemption of anthracite mines.

[STATUTORY PROVISION]

Sections 75.401, 75.402, and 75.403 shall not apply to underground anthracite mines.

Subpart F—Electrical Equipment—General

§ 75.500 Permissible electric equipment.

[STATUTORY PROVISION]

On and after March 30, 1971:

(a) All junction or distribution boxes used for making multiple power connections inby the last open crosscut shall be permissible;

(b) All handheld electric drills, blower and exhaust fans, electric pumps, and such other low horsepower electric face equipment as the Secretary may designate on or before May 30, 1970, which are taken into or used inby the last open crosscut of any coal mine shall be permissible;

(c) All electric face equipment which is taken into or used inby the last open crosscut of any coal mine classified under any provision of law as gassy prior to March 30, 1970, shall be permissible; and

(d) All other electric face equipment which is taken into or used inby the last crosscut of any coal mine, except a coal mine referred to in § 75.501, which has not been classified under any provision of law as a gassy mine prior to March 30, 1970, shall be permissible.

§ 75.500–1 Other low horsepower electric face equipment.

Other low horsepower electric face equipment designated pursuant to the provisions of § 75.500(b) is all other electric-driven mine equipment, except low horsepower rock dusting equipment, and employs an electric current supplied by either a power conductor or battery and consumes not more than 2,250 watts of electricity and which is taken into or used inby the last open crosscut.

§ 75.501 Permissible electric face equipment; coal seams above water table.

[STATUTORY PROVISION]

On and after March 30, 1974, all electric face equipment, other than equipment referred to in paragraph (b) of § 75.500, which is taken into and used inby the last open crosscut of any coal mine which is operated entirely in coal seams located above the water table and which has not been classified under any provision of law as a gassy mine prior to March 30, 1970, and in which one or more openings were made prior to December 30, 1969, shall be permissible.

§ 75.501–1 Coal seams above the water table.

As used in § 75.501, the phrase "coal seams above the water table" means coal seams in a mine which are located at an elevation above a river or the tributary of a river into which a local surface water system naturally drains.

§ 75.501–2 Permissible electric face equipment.

(a) On and after March 30, 1971, in mines operated entirely in coal seams which are located at elevations above the water table:

(1) All junction or distribution boxes used for making multiple power connections inby the last open crosscut shall be permissible; and

(2) All handheld electric drills, blower and exhaust fans, electric pumps, and all other electric-driven mine equipment, except low horsepower rock dusting equipment, that employs an electric current supplied by either a power conductor or battery and consumes not more than 2,250 watts of electricity, which is taken into or used inby the last open crosscut shall be permissible.

(b) On and after March 30, 1974, in mines operated entirely in coal seams which are located at elevations above the water table, all electric face equipment which is taken into or used inby the last crosscut shall be permissible.

§ 75.502 Permits for noncompliance.

An operator need not comply with paragraph (d) of § 75.500 or with § 75.501 during the period of time specified in a permit issued by the Interim Compliance Panel established by the Act.

§ 75.503 Permissible electric face equipment; maintenance.

[STATUTORY PROVISIONS]

The operator of each coal mine shall maintain in permissible condition all electric face equipment required by §§ 75.500, 75.501, 75.504 to be permissible which is taken into or used inby the last open crosscut of any such mine.

§ 75.503–1 Statement listing all electric face equipment.

Each operator of a coal mine shall complete and file Bureau of Mines Form No. 6–1496 entitled "Coal Operator's Electrical Survey" and Form 6–1496 Supplemental entitled "Operator's Survey of Electrical Face Equipment." Forms may be obtained from any Coal Mine Safety District Office or Subdistrict Office of the Bureau of Mines. Separate forms shall be filed for each mine. Copies one and two of the completed form shall be filed with the Coal Mine District or Subdistrict Manager for the district in which each mine is located on or before May 30, 1970. An operator must list all electric face equipment being used at each mine

as of the time of filing, all such equipment being repaired, and all standby electric equipment stored at or in the mine which the operator intends to use as face equipment.

§ 75.504 Permissibility of replacement and rebuilt electric face equipment.

[STATUTORY PROVISION]

On and after March 30, 1971, all replacement equipment acquired for use in any mine referred to in §§ 75.500, 75.501, 75.503 shall be permissible and shall be maintained in a permissible condition, and in the event of any major overhaul of any item of equipment in use on or after March 30, 1971, such equipment shall be put in, and thereafter maintained in, a permissible condition, unless, in the opinion of the Secretary, such equipment or necessary replacement parts are not available.

§ 75.505 Mines classed gassy; use and maintenance of permissible electric face equipment.

[STATUTORY PROVISION]

Any coal mine which, prior to March 30, 1970, was classed gassy under any provision of law and was required to use permissible electric face equipment and to maintain such equipment in a permissible condition shall continue to use such equipment and to maintain such equipment in such condition.

§ 75.506 Electric face equipment; requirements for permissibility.

(a) Electric-driven mine equipment and accessories manufactured on or after March 30, 1973, will be permissible electric face equipment only (1) if they are fabricated, assembled, or built under an approval, or any extension thereof, issued by the Bureau of Mines in accordance with schedule 2G, or any subsequent Bureau of Mines schedule promulgated by the Secretary after March 30, 1970, which amends, modifies, or supersedes the permissibility requirements of schedule 2G, and (2) if they are maintained in a permissible condition.

(b) Except as provided in paragraph (c) of this § 75.506 electric-driven mine equipment and accessories manufactured prior to March 30, 1973, will be permissible electric face equipment (1) if they were fabricated, assembled, or built under an approval, or any extension thereof, issued by the Bureau of Mines in accordance with the schedules set forth below, and (2) if they are maintained in a permissible condition.

Bureau of Mines Schedule 2D, May 23, 1936;
Bureau of Mines Schedule 2E, February 15, 1945;
Bureau of Mines Schedule 2F, August 3, 1955; and
Bureau of Mines Schedule 2G, March 19, 1968.

Copies of these schedules are available at all Coal Mine Safety District and Subdistrict Offices of the Bureau of Mines.

(c) Electric driven mine equipment and accessories bearing the Bureau of Mines approval numbers listed in appendix A to this subpart are permissible electric face equipment only if they are maintained in a permissible condition.

(d) Electric cap lamps, electric mine lamps other than standard cap lamps, flame safety lamps, portable methane detectors, telephones and signaling devices, single- and multiple-shot blasting units, lighting equipment for illuminating underground mines, and methane-monitoring systems will be permissible electric face equipment only (1) if they are approved under the appropriate Bureau of Mines schedule applicable to such equipment and (2) if they are in permissible condition. The Bureau of Mines schedules referred to, dates issued, and the appropriate parts of this chapter are:

Electric Cap Lamps, Bureau of Mines Schedule 6D, August 26, 1939 (Part 19);
Electric Mine Lamps Other than Standard Cap Lamps, Bureau of Mines Schedule 10C, May 17, 1938 (Part 20);
Flame Safety Lamps, Bureau of Mines Schedule 7C, August 30, 1935 (Part 21);
Portable Methane Detectors, Bureau of Mines Schedule 8C, October 31, 1935 (Part 22);
Telephone and Signaling Devices, Bureau of Mines Schedule 9B, October 25, 1938 (Part 23);
Single Shot Blasting Units, Bureau of Mines Shedule 12D, November 27, 1945 (Part 24);
Multiple Shot Blasting Units, Bureau of Mines Schedule 16E, May 19, 1960 (Part 25);
Lighting Equipment for Illuminating Underground Workings, Bureau of Mines Schedule 29A, December 2, 1958 (Part 26); and
Methane-Monitoring Systems, Bureau of Mines Schedule 32A, July 27, 1966 (Part 27).

§ 75.506–1 Electric face equipment; permissible condition; maintenance requirements.

(a) Except as provided in paragraph (b) of this section, electric face equipment which meets the requirements for permissibility set forth in § 75.506 will be considered to be in permissible condition only if it is maintained so as to meet the requirements for permissibility set forth in the Bureau of Mines schedule under which such electric face equipment was initially approved, or, if the equipment has been modified, it is maintained so as to meet the requirements of the schedule under which such modification was approved.

(b) Electric face equipment bearing the Bureau of Mines approval number listed in Appendix A of this subpart will be considered to be in permissible condition only if it is maintained so as to meet the requirements for permissibility set forth in Bureau of Mines Schedule 2D or, if such equipment has been modified, it is maintained so as to meet the requirements of the schedule under which the modification was approved.

(c) Notwithstanding the provisions of paragraphs (a) and (b) of this section, where the minimum requirements for permissibility set forth in the appropriate Bureau of Mines schedule under which such equipment or modifications were approved have been superseded by the requirements of this Part 75, the latter requirements shall be applicable.

§ 75.507 Power connection points.

[STATUTORY PROVISIONS]

Except where permissible power connection units are used, all power-connection points outby the last open crosscut shall be in intake air.

§ 75.508 Map of electrical system.

[STATUTORY PROVISIONS]

The location and the electrical rating of all stationary electric apparatus in connection with the mine electric system, including permanent cables, switchgear, rectifying substations, transformers, permanent pumps, and trolley wires and trolley feeder wires, and settings of all direct-current circuit breakers protecting underground trolley circuits, shall be shown on a mine map. Any changes made in a location, electric rating, or setting shall be promptly shown on the map when the change is made. Such map shall be available to an authorized representative of the Secretary and to the miners in such mine.

§ 75.508–1 Mine tracks.

When mine track is used as a conductor of a trolley system, the location of such track shall be shown on the map required by § 75.508, with a notation of the number of rails and the size of such track expressed in pounds per yard.

§ 75.508–2 Changes in electric system map; recording.

Changes made in the location, electrical rating or setting within the mine electrical system shall be recorded on the map of such system no later than the end of the next workday following completion of such changes.

§ 75.509 Electric power circuit and electric equipment; deenergization.

[STATUTORY PROVISIONS]

All power circuits and electric equipment shall be deenergized before work is done on such circuits and equipment, except when necessary for trouble shooting or testing.

§ 75.510 Energized trolley wires; repair.

[STATUTORY PROVISIONS]

Energized trolley wires may be repaired only by a person trained to perform electrical work and to maintain electrical equipment and the operator of a mine shall require that such person wear approved and tested insulated shoes and wireman's gloves.

§ 75.510–1 Repair of energized trolley wires; training.

The training referred to in § 75.510 must include training in the repair and maintenance of live trolley wires, and in the hazards involved in making such repairs, and in the limitations of protective clothing used to protect against such hazards.

§ 75.511 Low-, medium-, or high-voltage distribution circuits, and equipment; repair.

[STATUTORY PROVISION]

No electrical work shall be performed on low-, medium-, or high-voltage distribution circuits or equipment, except by a qualified person or by a person trained to perform electrical work and to maintain electrical equipment under the direct supervision of a qualified person. Disconnecting devices shall be locked out and suitably tagged by the persons who perform such work, except that in cases where locking out is not possible, such devices shall be opened and suitably tagged by such persons. Locks or tags shall be removed only by the persons who installed them or, if such persons are unavailable, by persons authorized by the operator or his agent.

§ 75.511–1 Qualified person.

To be a qualified person within the meaning of § 75.511, an individual must meet the requirements of § 75.153.

§ 75.512 Electric equipment; examination, testing and maintenance.

[STATUTORY PROVISION]

All electric equipment shall be frequently examined, tested, and properly maintained by a qualified person to assure safe operating conditions. When a potentially dangerous condition is found on electric equipment, such equipment shall be removed from service until such condition is corrected. A record of such examinations shall be kept and made available to an authorized representative of the Secretary and to the miners in such mine.

§ 75.512–1 Qualified person.

To be a qualified person within the meaning of § 75.512, an individual must meet the requirements of § 75.153.

§ 75.512–2 Frequency of examinations.

The examinations and tests required by § 75.512 shall be made at least weekly. Permissible equipment shall be examined to see that it is in permissible condition.

§ 75.513 Electric conductor; capacity and insulation.

[STATUTORY PROVISION]

All electric conductors shall be sufficient in size and have adequate current carrying capacity and be of such construction that a rise in temperature resulting from normal operation will not damage the insulating materials.

§ 75.513–1 Electric conductor; size.

An electric conductor is not of sufficient size to have adequate carrying capacity if it is smaller than is provided for in the National Electric Code, 1968. In addition, equipment and trailing cables that are required to be permissible must meet the requirements of the appropriate schedules of the Bureau of Mines.

§ 75.514 Electrical connections or splices; suitability.

[STATUTORY PROVISION]

All electrical connections or splices in conductors shall be mechanically and electrically efficient, and suitable connectors shall be used. All electrical connections or splices in insulated wire shall be reinsulated at least to the same degree of protection as the remainder of the wire.

§ 75.515 Cable fittings; suitability.

[STATUTORY PROVISION]

Cables shall enter metal frames of motors, splice boxes, and electric compartments only through proper fittings. When insulated wires other than cables pass through metal frames, the holes shall be substantially bushed with insulated bushings.

§ 75.516 Power wires; support.

[STATUTORY PROVISION]

All power wires (except trailing cables on mobile equipment, specially designed cables conducting high-voltage power to underground rectifying equipment or transformers, or bare or insulated ground and return wires) shall be supported on well-insulated insulators and shall not contact combustible material, roof, or ribs.

§ 75.516–1 Installed insulators.

Well-insulated insulators is interpreted to mean well-installed insulators. Insulated J-hooks may be used to suspend insulated power cables for temporary installation not exceeding 6 months and for permanent installation of control cables such as may be used along belt conveyors.

§ 75.517 Power wires and cables; insulation and protection.

[STATUTORY PROVISIONS]

Power wires and cables, except trolley wires, trolley feeder wires, and bare signal wires, shall be insulated adequately and fully protected.

§ 75.517–1 Power wires and cables; insulation and protection.

Power wires and cables installed on or after March 30, 1970, shall have insulation with a dielectric strength at least equal to the voltage of the circuit.

§ 75.517–2 Plans for insulation of existing bare power wires and cables.

(a) On or before December 31, 1970, plans for the insulation of existing bare power wires and cables installed prior to March 30, 1970, shall be filed with the District Manager of the Coal Mine Safety District in which the mine is located to permit approval and prompt implementation of such plans.

(b) The appropriate District Manager shall notify the operator in writing of the approval of a proposed insulation plan. If revisions are required for approval, the changes required will be specified.

(c) An insulation plan shall include the following information:

(1) Name and address of the company, the mine and the responsible officials;

(2) Map or diagram indicating location of power wires and cables required to be insulated;

(3) Total length of bare power wires and cables required to be insulated;

(4) Schedule for the replacement or insulation of bare power wires and cables;

(5) Type of insulation to be used and the voltage rating as indicated by the manufacturer.

(d) The District Manager shall be guided by the following criteria in approving insulation plans on a mine-by-mine basis. Insulation not conforming to these criteria may be approved provided the operator can satisfy the Bureau of Mines that the insulation will provide no less than the same measure of protection.

(1) Insulation shall be adequate for the applied voltage of the circuit.

(2) When tubing is used to insulate existing power wires and cables, it shall have a dielectric strength at least equal to the voltage of the circuit. When the tubing is split for purposes of installation, the joints shall be effectively sealed. The butt ends may be sealed with a moisture resistant insulating tape.

(3) When tape is used to insulate existing power wires and cables, it shall be applied half-lapped and one thickness of the tape shall have a dielectric strength at least equal to the voltage of the circuit. The tape shall be self-adhesive and moisture resistant.

§ 75.518 Electric equipment and circuits; overload and short circuit protection.

[STATUTORY PROVISION]

Automatic circuit-breaking devices or fuses of the correct type and capacity shall be installed so as to protect all electrict equipment and circuits against short circuit and overloads. Three-phase motors on all electric equipment shall be provided with overload protection that will deenergize all three phases in the event that any phase is overloaded.

§ 75.518–1 Electric equipment and circuits; overload and short circuit protection; minimum requirements.

A device to provide either short circuit protection or protection against overload which does not conform to the provisions of the National Electric Code, 1968, does not meet the requirement of § 75.518. In addition, such devices on electric face equipment and trailing cables that are required to be permissible must meet the requirements of the applicable schedules of the Bureau of Mines.

§ 75.518–2 Incandescent lamps, overload and short circuit protection.

Incandescent lamps installed along haulageways and at other locations, not contacting combustible material, and powered from trolley or direct current feeder circuits, need not be provided with

separate short circuit or overload protection, if the lamp is not more than 8 feet in distance from such circuits.

§ 75.519 Main power circuits; disconnecting switches.

[STATUTORY PROVISION]

In all main power circuits, disconnecting switches shall be installed underground within 500 feet of the bottoms of shafts and boreholes through which main power circuits enter the underground area of the mine and within 500 feet of all other places where main power circuits enter the underground area of the mine.

§ 75.519–1 Main power circuits; disconnecting switches; locations.

Section 75.519 requires (a) that a disconnecting switch be installed on the surface at a point within 500 feet of the place where the main power circuit enters the underground area of a mine, and (b) that, in an instance on which a main power circuit enters the underground area through a shaft or borehole, a disconnecting switch be installed underground within 500 feet of the bottom of the shaft or borehole.

§ 75.520 Electric equipment; switches.

[STATUTORY PROVISION]

All electric equipment shall be provided with switches or other controls that are safely designed, constructed, and installed.

§ 75.521 Power conductors, lightning arresters.

[STATUTORY PROVISION]

Each ungrounded, exposed power conductor that leads underground shall be equipped with suitable lightning arresters of approved type within 100 feet of the point where the circuit enters the mine. Lightning arresters shall be connected to a low resistance grounding medium on the surface which shall be separated from neutral grounds by a distance of not less than 25 feet.

§ 75.522 Lighting devices.

[STATUTORY PROVISION]

No device for the purpose of lighting any coal mine which has not been approved by the Secretary or his authorized representative shall be permitted in such mine.

§ 75.522–1 Incandescent and fluorescent lamps.

(a) Except for areas of a coal mine inby the last open crosscut, incandescent lamps may be used to illuminate underground areas. When incandescent lamps are used in a track entry or belt entry or near track entries to illuminate special areas other than structures, the lamps shall be installed in weather-proof sockets located in positions such that the lamps will not come in contact with any combustible material. Lamps used in all other places must be of substantial construction and be fitted with a glass enclosure.

(b) Incandescent lamps within glass enclosures or fluorescent lamps may be used inside underground structures (except magazines used for the storage of explosives and detonators). In underground structures lighting circuits shall consist of cables installed on insulators or insulated wires installed in metallic conduit or metallic armor.

§ 75.523 Electric face equipment; deenergization.

[STATUTORY PROVISION]

An authorized representative of the Secretary may require in any mine that electric face equipment be provided with devices that will permit the equipment to be deenergized quickly in the event of an emergency.

APPENDIX A

List of permissible electric face equipment approved by the Bureau of Mines prior to May 23, 1936.

MOTOR-DRIVEN MINE EQUIPMENT

(Approved Under Schedules 2, 2A, 2B, and 2C)

AIR COMPRESSORS

Approval No.	Date
128	March 21, 1927.
128A	July 16, 1926.

COAL DRILLS AND DRILLING MACHINES

Hand Drills

109	September 19, 1922.
154	August 1, 1928.
184	February 7, 1930.
227	July 29, 1931.
254	July 15, 1933.

Post Drills

119	April 15, 1925.
119A	Do.
225	July 10, 1931.
225A	Do.
228	August 12, 1931.
228A	February 17, 1932.
230	August 20, 1931.
230A	Do.
237	December 1, 1931.
237A	Do.

Drilling Machines

147	February 8, 1928.
147A	Do.
176	September 9, 1929.
176A	Do.

LOADING AND CONVEYING EQUIPMENT

LOADING MACHINES

Unmounted Type

122	January 8, 1926.
122A	Do.

Caterpillar-Mounted Type

150	May 11, 1928.
186	March 15, 1930.
222	May 8, 1931.
222A	July 28, 1931.
229	August 17, 1931.
229A	Do.
235	November 27, 1931.
235A	October 29, 1931.
278	January 17, 1935.
278A	Do.
283A	March 12, 1935.
284A	Do.
285A	Do.
294	September 18, 1935.
300A	May 6, 1936.
127	July 16, 1926.
127A	September 23, 1927.

LOADING AND CONVEYING EQUIPMENT—Con.

LOADING MACHINES—continued

Track-Mounted Type

194	June 6, 1930.
194A	Do.
217	February 27, 1931.
217A	Do.
276	January 11, 1935.
277	January 17, 1935.
282A	March 12, 1935.
291A	July 3, 1935.

Pit-Car Loaders

167	March 27, 1929.
167A	Do.
175	July 26, 1929.
175A	June 24, 1929.
250	December 10, 1932.
250A	Do.
252A	February 20, 1933.

CONVEYORS

Belt Type

236	November 19, 1931.
287A	March 12, 1935.
296A	January 6, 1936.

Chain Type

151	May 19, 1928.
209	December 2, 1930.
240	March 12, 1932.
240A	Do.
298A	March 3, 1936.

Power Units for Conveyors

265	February 12, 1934.
265A	March 9, 1934.
390A	March 23, 1934.

Shaker Type

247	October 21, 1932.
257A	August 11, 1933.
262A	December 8, 1933.
271	May 20, 1935.
271A	October 17, 1934.
274A	December 13, 1934.
286A	March 12, 1935.
295	September 20, 1935.
299A	April 9, 1936.

Scraper-type Loaders

138	August 5, 1927.
138A	Do.
196	September 29, 1930.
196A	July 26, 1930.
226	July 27, 1931.
255	July 31, 1933.
256	Do.

MINING MACHINES, MACHINERY-MOVING EQUIPMENT, MISCELLANEOUS TRUCKS, AND WATER SPRAY SUPPLY UNITS

MINING MACHINES

Shortwall Machines

103	November 2, 1917.
103A	Do.
105	February 9, 1922.
105A	Do.
106	Do.
106A	Do.
107	Do.
107A	Do.
108	Do.
108A	Do.
111	October 16, 1922.
111A	Do.
113	November 4, 1924.
113A	Do.
114	February 7, 1925.
114A	Do.
115	Do.
115A	Do.
153	July 31, 1928.
153A	Do.
193	June 3, 1930.
193A	Do.

197	July 31, 1930.
197A	Do.
198	August 1, 1930.
198A	Do.
201	September 8, 1930.
201A	Do.
204	October 13, 1930.
204A	December 13, 1930.
223	May 13, 1931.
223A	Do.
241	March 18, 1932.
241A	Do.
258	August 15, 1933.
259A	August 16, 1933.
260A	August 17, 1933.
273	November 30, 1934.
288	March 27, 1935.
288A	Do.
292	September 11, 1935.
292A	Do.
293A	Do.

Longwall Machines

185	February 24, 1930.
185A	Do.
218	March 10, 1931.
218A	Do.
246	August 19, 1932.
246A	Do.
261	September 12, 1933.

Track or caterpillar mounted

112	March 13, 1924.
112A	Do.
118	March 12, 1925.
118A	Do.
125	April 26, 1926.
125A	Do.
172	April 30, 1929.
172A	Do.
188	April 15, 1930.
188A	Do.
207	November 14, 1930.
207A	Do.
216	February 12, 1931.
216A	Do.
231	August 31, 1931.
231A	Do.
242	April 7, 1932.
244	June 18, 1932.
244A	September 20, 1932.
253A	February 25, 1933.
267	June 27, 1934.
268A	July 25, 1934.
269A	September 24, 1934.
280A	March 4, 1935.
297	January 27, 1936.
297A	Do.

Mine Pumps

140	November 1, 1927.
140A	Do.
143	Do.
143A	Do.
144	Do.
144A	Do.
199	August 18, 1930.
199A	Do.
208	November 29, 1930.
210	December 15, 1930.
210A	Do.
211	December 17, 1930.
211A	Do.
213	December 29, 1930.
213A	Do.
214	January 2, 1931.
214A	Do.
215	Do.
215A	Do.
248	October 31, 1932.
248A	November 23, 1932.
264	January 31, 1934.
264A	Do.
272	October 23, 1934.
272A	Do.

Rock-Dusting Machines

130	November 5, 1926.
137	July 2, 1927.
146	January 20, 1928.
146A	April 3, 1928.
180	October 30, 1929.
180A	January 17, 1930.
206	November 12, 1930.
279	February 14, 1935.

Room and Car-Spotting Hoists

116	February 13, 1925.
116A	Do.
164	January 21, 1931.
164A	Do.
165	Do.
165A	Do.
169	April 5, 1929.
169A	February 26, 1934.
190	April 20, 1930.
251A	January 16, 1933.
263	January 11, 1934.
266A	February 27, 1934.

STORAGE-BATTERY LOCOMOTIVES AND POWER TRUCKS

(Approved under Schedules 15, 2C, 2D, and 2E)

Gathering Locomotives

1501	October 11, 1921.
1502	November 13, 1922.
1503	March 24, 1923.
1505	April 5, 1924.
1507	August 20, 1925.
1508	March 21, 1925.
1509	September 25, 1925.
1511	November 10, 1925.
1512	November 11, 1925.
1513	February 25, 1926.
1516	December 28, 1926.
1517	February 10, 1927.
1520	May 27, 1929.
1521	June 13, 1930.
1522	September 12, 1930.
1523	December 19, 1930.
1525	July 25, 1934.
1526	December 20, 1935.

Tandem Locomotive

1518	November 21, 1927.

Power Trucks

1506	May 5, 1924.
1505A	June 21, 1926.
1510C	December 31, 1926.
1514	December 18, 1926.
1515	December 28, 1926.
1512C	September 13, 1928.
1519C	April 6, 1929.
1524C	June 25, 1934.

JUNCTION, DISTRIBUTION, AND SPLICE BOXES

(Approved under Schedules 2D and 2E)

Junction Boxes

400	June 16, 1928.
400A	August 5, 1925.
401	May 11, 1927.
401A	Do.
402	Do.
402A	Do.
403	April 14, 1931.
403A	Do.
405A	December 4, 1933.

Subpart G—Trailing Cables

§ 75.600 Trailing cables; flame resistance.

[STATUTORY PROVISIONS]

Trailing cables used in coal mines shall meet the requirements established by the Secretary for flame-resistant cables.

§ 75.600–1 Approved cables; flame resistance.

The requirements for flame resistant cables are set forth in § 18.64 of this chapter (Bureau of Mines Schedule 2G).

§ 75.601 Short circuit protection of trailing cables.

[STATUTORY PROVISIONS]

Short circuit protection for trailing cables shall be provided by an automatic circuit breaker or other no less effective device approved by the Secretary of adequate current-interrupting capacity in each ungrounded conductor. Disconnecting devices used to disconnect power from trailing cables shall be plainly marked and identified and such devices shall be equipped or designed in such a manner that it can be determined by visual observation that the power is disconnected.

§ 75.601–1 Short circuit protection; ratings and settings of circuit breakers.

Circuit breakers providing short circuit protection for trailing cables shall be set so as not to exceed the maximum allowable instantaneous settings specified in this section; however, higher settings may be permitted by an authorized representative of the Secretary when he has determined that special applications are justified:

Conductor size AWG or MGM	*Maximum allowable circuit breaker instantaneous setting (amperes)*
14	50
12	75
10	150
8	200
6	300
4	500
3	600
2	800
1	1,000
1/0	1,250
2/0	1,500
3/0	2,000
4/0	2,500
250	2,500
300	2,500
350	2,500
400	2,500
450	2,500
500	2,500

§ 75.601–2 Short circuit protection; use of fuses; approval by the Secretary.

Fuses shall not be employed to provide short circuit protection for trailing cables unless specifically approved by the Secretary.

§ 75.601–3 Short circuit protection; dual element fuses; current ratings; maximum values.

Dual element fuses having adequate current-interrupting capacity shall meet the requirements for short circuit protection of trailing cables as provided in § 75.601, however, the current ratings of such devices shall not exceed the maximum values specified in this section:

Conductor size (AWG or MGM)	Single conductor cable		Two conductor cable	
	Ampacity	Maximum fuse rating	Ampacity	Maximum fuse rating
14			15	15
12			20	20
10			25	25
8	60	60	55	60
6	85	90	65	70
4	110	110	90	90
3	130	150	105	110
2	150	150	120	125
1	170	175	140	150
1/0	200	200	170	175
2/0	235	250	195	200
3/0	275	300	225	225
4/0	315	350	260	300
250	350	350	285	300
300	395	400	310	350
350	445	450	335	350
400	480	500	360	400
450	515	600	385	400
500	545	600	415	450

§ 75.602 Trailing cable junctions.

[STATUTORY PROVISION]

When two or more trailing cables junction to the same distribution center, means shall be provided to assure against connecting a trailing cable to the wrong size circuit breaker.

§ 75.603 Temporary splice of trailing cable.

[STATUTORY PROVISION]

One temporary splice may be made in any trailing cable. Such trailing cable may only be used for the next 24-hour period. No temporary splice shall be made in a trailing cable within 25 feet of the machine, except cable reel equipment. Temporary splices in trailing cables shall be made in a workmanlike manner and shall be mechanically strong and well insulated. Trailing cables or hand cables which have exposed wires or which have splices that heat or spark under load shall not be used. As used in this section, the term "splice" means the mechanical joining of one or more conductors that have been severed.

§ 75.604 Permanent splicing of trailing cables.

[STATUTORY PROVISIONS]

When permanent splices in trailing cables are made, they shall be:

(a) Mechanically strong with adequate electrical conductivity and flexibility;

(b) Effectively insulated and sealed so as to exclude moisture; and

(c) Vulcanized or otherwise treated with suitable materials to provide flame-resistant qualities and good bonding to the outer jacket.

§ 75.604–1 Approved processes other than vulcanizing.

Raychem Corp.'s Thermofit Insulated Mine Splice is approved as meeting the flame-resistant requirements of paragraph (c) of § 75.604.

§ 75.605 Clamping of trailing cables to equipment.

[STATUTORY PROVISIONS]

Trailing cables shall be clamped to machines in a manner to protect the cables from damage and to prevent strain on the electrical connections.

§ 75.606 Protection of trailing cables.

[STATUTORY PROVISIONS]

Trailing cables shall be adequately protected to prevent damage by mobile equipment.

§ 75.607 Breaking trailing cable and power cable connections.

[STATUTORY PROVISIONS]

Trailing cable and power cable connections to junction boxes shall not be made or broken under load.

Subpart H—Grounding

§ 75.700 Grounding metallic sheaths, armors, and conduits enclosing power conductors.

[STATUTORY PROVISIONS]

All metallic sheaths, armors, and conduits enclosing power conductors shall be electrically continuous throughout and shall be grounded by methods approved by an authorized representative of the Secretary.

§ 75.700–1 Approved methods of grounding.

Metallic sheaths, armors and conduits in resistance grounded systems where the enclosed conductors are a part of the system will be approved if a solid connection is made to the neutral conductor; in all other systems, the following methods of grounding will be approved:

(a) A solid connection to a borehole casing having low resistance to earth;

(b) A solid connection to metal waterlines having low resistance to earth;

(c) A solid connection to a grounding conductor, other than the neutral conductor of a resistance grounded system, extending to a low resistance ground field located on the surface;

(d) Any other method of grounding, approved by an authorized representative of the Secretary, which ensures that there is no difference in potential between such metallic enclosures and the earth.

§ 75.701 Grounding metallic frames, casings, and other enclosures of electric equipment.

[STATUTORY PROVISIONS]

Metallic frames, casings, and other enclosures of electric equipment that can become "alive" through failure of insulation or by contact with energized parts shall be grounded by methods approved by an authorized representative of the Secretary.

§ 75.701–1 Approved methods of grounding of equipment receiving power from ungrounded alternating current power systems.

For purposes of grounding metallic frames, casings and other enclosures of equipment receiving power from ungrounded alternating current power systems, the following methods of grounding will be approved:

(a) A solid connection between the metallic frame, casing, or other metal enclosure and the grounded metallic sheath, armor, or conduit enclosing the power conductor feeding the electrical equipment enclosed;

(b) A solid connection to a borehole casing having low resistance to earth;

(c) A solid connection to metal waterlines having low resistance to earth;

(d) A solid connection to a grounding conductor extending to a low resistance ground field located on the surface;

(e) Any other method of grounding, approved by an authorized representative of the Secretary, which ensures that there is no difference in potential between such metal enclosures and the earth.

§ 75.701–2 Approved method of grounding metallic frames, casings and other enclosures receiving power from single-phase 110–220-volt circuit.

In instances where single-phase 110–220-volt circuits are used to feed electrical equipment, the only method of grounding that will be approved is the connection of all metallic frames, casings and other enclosures of such equipment to a separate grounding conductor which establishes a continuous connection to a grounded center tap of the transformer.

§ 75.701–3 Approved methods of grounding metallic frames, casings and other enclosures of electric equipment receiving power from direct current power systems with one polarity grounded.

For the purpose of grounding metallic frames, casings and enclosures of any electric equipment or device-receiving power from a direct-current power system with one polarity grounded, the following methods of grounding will be approved:

(a) A solid connection to the mine track;

(b) A solid connection to the grounded power conductor of the system;

(c) Silicon diode grounding; however, this method shall be employed only when such devices are installed in accordance with the requirements set forth in paragraph (d) of § 75.703–3; and

(d) Any other method, approved by an authorized representative of the Secretary, which insures that there is no difference in potential between such metal enclosures and the earth.

§ 75.701–4 Grounding wires; capacity of wires.

Where grounding wires are used to ground metallic sheaths, armors, conduits, frames, casings, and other metallic enclosures, such grounding wires will be approved if:

(a) The cross-sectional area (size) of the grounding wire is at least one-half the cross-sectional area (size) of the power conductor where the power conductor used is No. 6 A.W.G., or larger.

(b) Where the power conductor used is less than No. 6 A.W.G., the cross-sectional area (size) of the grounding wire is equal to the cross-sectional area (size) of the power conductor.

§ 75.701–5 Use of grounding connectors.

The attachment of grounding wires to a mine track or other grounded power conductor will be approved if separate clamps, suitable for such purpose, are used and installed to provide a solid connection.

§ 75.702 Protection other than grounding.

[STATUTORY PROVISIONS]

Methods other than grounding which provide no less effective protection may be permitted by the Secretary or his authorized representative.

§ 75.702–1 Protection other than grounding; approved by an authorized representative of the Secretary.

Under this subpart no method other than grounding may be used to ensure against a difference in potential between metallic sheaths, armors and conduits, enclosing power conductors and frames, casings and metal enclosures of electric equipment, and the earth, unless approved by an authorized representative of the Secretary.

§ 75.703 Grounding offtrack direct-current machines and the enclosures of related detached components.

[STATUTORY PROVISIONS]

The frames of all offtrack direct-current machines and the enclosures of related detached components shall be effectively grounded, or otherwise maintained at no less safe voltages, by methods approved by an authorized representative of the Secretary.

§ 75.703–1 Approved method of grounding.

In instances where the metal frames both of an offtrack direct-current machine and of the metal frames of its component parts are grounded to the same grounding medium the requirements of § 75.703 will be met.

§ 75.703–2 Approved grounding mediums.

For purposes of grounding offtrack direct-current machines, the following grounding mediums are approved:

(a) The grounded polarity of the direct-current power system feeding such machines; or,

(b) The alternating current grounding medium where such machines are fed by an ungrounded direct-current power system originating in a portable rectifier receiving its power from a section power center. However, when such a medium is used, a separate grounding conductor must be employed.

§ 75.703–3 Approved methods of grounding offtrack mobile, portable and stationary direct-current machines.

In grounding offtrack direct-current machines and the enclosures of their component parts, the following methods of grounding will meet the requirements of § 75.703:

(a) The use of a separate grounding conductor located within the trailing cable of mobile and portable equipment and connected between such equipment and the direct-current grounding medium;

(b) The use of a separate ground conductor located within the direct-current power cable feeding stationary equipment and connected between such stationary equipment and the direct-current grounding medium;

(c) The use of a separate external ground conductor connected between stationary equipment and the direct-current grounding medium; or,

(d) The use of silicon diodes; however, the installation of such devices shall meet the following minimum requirements:

(1) Installation of silicon diodes shall be restricted to electric equipment receiving power from a direct-current system with one polarity grounded;

(2) Where such diodes are used on circuits having a nominal voltage rating of 250, they must have a forward current rating of 400 amperes or more, and have a peak inverse voltage rating of 400 or more;

(3) Where such diodes are used on circuits having a nominal voltage rating of 550, they must have a forward current rating of 250 amperes or more, and have a peak inverse voltage rating of 800 or more;

(4) Where fuses approved by the Secretary are used at the outby end of a trailing cable connected to electrical equipment employing silicon diodes, the rating of such fuses must not exceed 150 percent of the nominal current rating of the grounding diodes;

(5) Where circuit breakers are used at the outby end of a trailing cable connected to electrical equipment employing silicon diodes, the instantaneous trip setting shall not exceed 300 percent of the nominal current rating of the grounding diode;

(6) Overcurrent devices must be used and installed in such a manner that the operating coil circuit of the main contactor will open when a fault current with a value of 25 percent or less of the diode rating flows through the diode;

(7) The silicon diode installed must be suitable to the grounded polarity of the power system in which it is used and its threaded base must be solidly connected to the machine frame on which it is installed;

(8) In addition to the grounding diode, a polarizing diode must be installed in the machine control circuit to prevent operation of the machine when the polarity of a trailing cable is reversed;

(9) When installed on permissible equipment, all grounding diodes, overcurrent devices, and polarizing diodes must be placed in explosion proof compartments;

(10) When grounding diodes are installed on a continuous miner, their nominal diode current rating must be at least 750 amperes or more; and,

(11) All grounding diodes shall be tested, examined and maintained as electrical equipment in accordance with the provisions of § 75.512.

§ 75.703–4 Other methods of protecting offtrack direct-current equipment; approved by an authorized representative of the Secretary.

Other methods of maintaining safe voltage by preventing a difference between the frames of offtract direct-current machines and the earth must be approved by an authorized representative of the Secretary.

§ 75.704 Grounding frames of stationary high voltage equipment receiving power from ungrounded delta systems.

[STATUTORY PROVISIONS]

The frames of all stationary high-voltage equipment receiving power from ungrounded delta systems shall be grounded by methods approved by an authorized representative of the Secretary.

§ 75.704–1 Approved methods of grounding.

The methods of grounding stated in § 75.701–1 will also be approved with respect to the grounding of frames of high-voltage equipment referred to in § 75.704.

§ 75.705 Work on high-voltage lines; deenergizing and grounding.

[STATUTORY PROVISIONS]

High-voltage lines, both on the surface and underground, shall be deenergized and grounded before work is performed on them, except that repairs may be permitted, in the case of energized surface high-voltage lines, if such repairs are made by a qualified person in accordance with procedures and safeguards, including, but not limited to, a requirement that the operator of such mine provide, test, and maintain protective devices in making such repairs, to be prescribed by the Secretary prior to March 30, 1970.

§ 75.705–1 Work on high-voltage lines.

(a) Section 75.705 specifically prohibits work on energized high-voltage lines underground;

(b) No high-voltage line, either on the surface or underground, shall be regarded as deenergized for the purpose of performing work on it, until it has been determined by a qualified person (as provided in § 75.153) that such high-voltage line has been deenergized and grounded. Such qualified person shall by visual observation (1) determine that the disconnecting devices on the high-voltage circuit are in open position and (2) ensure that each ungrounded conductor of the high-voltage circuit upon which work is to be done is properly connected to the system-grounding medium. In the case of resistance grounded or solid wye-connected systems, the neutral wire is the system-grounding medium. In the case of an ungrounded power system, either the steel armor or conduit enclosing the system or a surface grounding field is a system grounding medium;

(c) No work shall be performed on any high-voltage line on the surface which

is supported by any pole or structure which also supports other high-voltage lines until: (1) All lines supported on the pole or structure are deenergized and grounded in accordance with all of the provisions of this section which apply to the repair of energized surface high-voltage lines; or (2) the provisions of §§ 75.705–2 through 75.705–10 have been complied with, with respect to all lines, which are supported on the pole or structure.

(d) Work may be performed on energized surface high-voltage lines only in accordance with the provisions of §§ 75.705–2 through 75.705–10, inclusive.

§ 75.705–2 Repairs to energized surface high-voltage lines.

An energized high-voltage surface line may be repaired only when

(a) The operator has determined that:

(1) Such repairs cannot be scheduled during a period when the power circuit could be properly deenergized and grounded;

(2) Such repairs will be performed on power circuits with a phase-to-phase nominal voltage no greater than 15,000 volts;

(3) Such repairs on circuits with a phase-to-phase nominal voltage of 5,000 volts or more will be performed only with the use of live line tools;

(4) Weather conditions will not interfere with such repairs or expose those persons assigned to such work to an imminent danger; and

(b) The operator has designated a person qualified under the provisions of § 75.154 as the person responsible for carrying out such repairs and such person, in order to ensure protection for himself and other qualified persons assigned to perform such repairs from the hazards of such repair, has prepared and filed with the operator:

(1) A general description of the nature and location of the damage or defect to be repaired;

(2) The general plan to be followed in making such repairs;

(3) A statement that a briefing of all qualified persons assigned to make such repairs was conducted informing them of the general plan, their individual assignments, and the dangers inherent in such assignments;

(4) A list of the proper protective equipment and clothing that will be provided; and

(5) Such other information as the person designated by the operator feels necessary to describe properly the means or methods to be employed in such repairs.

§ 75.705–3 Work on energized high-voltage surface lines; reporting.

Any operator designating and assigning qualified persons to perform repairs on energized high-voltage surface lines under the provisions of § 75.705–2 shall maintain a record of such repairs. Such record shall contain a notation of the time, date, location, and general nature of the repairs made, together with a copy of the information filed with the operator by the qualified person designated as responsible for performing such repairs.

§ 75.705–4 Simultaneous repairs.

When two or more persons are working on an energized high-voltage surface line simultaneously, and any one of them is within reach of another, such persons shall not be allowed to work on different phases or on equipment with different potentials.

§ 75.705–5 Installation of protective equipment.

Before repair work on energized high-voltage surface lines is begun, protective equipment shall be used to cover all bare conductors, ground wires, guys, telephone lines, and other attachments in proximity to the area of planned repairs. Such protective equipment shall be installed from a safe position below the conductors or other apparatus being covered. Each rubber protective device employed in the making of repairs shall have a dielectric strength of 20,000 volts, or more.

§ 75.705–6 Protective clothing; use and inspection.

All persons performing work on energized high-voltage surface lines shall wear protective rubber gloves, sleeves, and climber guards if climbers are worn. Protective rubber gloves shall not be worn wrong side out or without protective leather gloves. Protective devices worn by a person assigned to perform repairs on high-voltage surface lines shall be worn continuously from the time he leaves the ground until he returns to the ground, and, if such devices are employed for extended periods, such person shall visually inspect the equipment assigned him for defects before each use and, in no case, less than twice each day.

§ 75.705–7 Protective equipment; inspection.

Each person shall visually inspect protective equipment and clothing provided him in connection with work on high-voltage surface lines before using such equipment and clothing, and any equipment or clothing containing any defect or damage shall be discarded and replaced with proper protective equipment or clothing prior to the performance of any electrical work on such lines.

§ 75.705–8 Protective equipment; testing and storage.

(a) All rubber protective equipment used on work on energized high-voltage surface lines shall be electrically tested by the operator in accordance with ASTM standards, Part 28, published February 1968, and such testing shall be conducted in accordance with the following schedule:

(1) Rubber gloves, once each month;

(2) Rubber sleeves, once every 3 months;

(3) Rubber blankets, once every 6 months;

(4) Insulator hoods and line hose, once a year; and

(5) Other electric protective equipment, once a year.

(b) Rubber gloves shall not be stored wrong side out. Blankets shall be rolled when not in use, and line hose and insulator hoods shall be stored in their natural position and shape.

§ 75.705–9 Operating disconnecting or cutout switches.

Disconnecting or cutout switches on energized high-voltage surface lines shall be operated only with insulated sticks, fuse tongs, or pullers which are adequately insulated and maintained to protect the operator from the voltage to which he is exposed. When such switches are operated from the ground, the person operating such devices shall wear protective rubber gloves.

§ 75.705–10 Tying into energized high-voltage surface circuits.

If the work of forming an additional circuit by tying into an energized high-voltage surface line is performed from the ground, any person performing such work must wear and employ all of the protective equipment and clothing required under the provisions of §§ 75.705–5 and 75.705–6. In addition, the insulated stick used by such person must have been designed for such purpose and must be adequately insulated and be maintained to protect such person from the voltage to which he is exposed.

§ 75.705–11 Use of grounded messenger wires; ungrounded systems.

Solely for purposes of grounding ungrounded high-voltage power systems, grounded messenger wires used to suspend the cables of such systems may be used as a grounding medium.

§ 75.706 Deenergized underground power circuits; idle days-idle shifts.

[STATUTORY PROVISIONS]

When not in use, power circuits underground shall be deenergized on idle days and idle shifts, except that rectifiers and transformers may remain energized.

Subpart I—Underground High-Voltage Distribution

§ 75.800 High-voltage circuits; circuit breakers.

[STATUTORY PROVISIONS]

High-voltage circuits entering the underground area of any coal mine shall be protected by suitable circuit breakers of adequate interrupting capacity which are properly tested and maintained as prescribed by the Secretary. Such breakers shall be equipped with devices to provide protection against under-voltage, grounded phase, short circuit, and overcurrent.

§ 75.800–1 Circuit breakers; location.

Circuit breakers protecting high-voltage circuits entering an underground area of any coal mine shall be located on the surface and in no case installed either underground or within a drift.

§ 75.800–2 Approved circuit schemes.

The following circuit schemes will be regarded as providing the necessary protection to the circuits required by § 75.800:

(a) Ground check relays may be used for undervoltage protection if the relay coils are designed to trip the circuit breaker when line voltage decreases to 40 percent to 60 percent of the nominal line voltage;

(b) Ground trip relays on resistance grounded systems will be acceptable as grounded phase protection;

(c) One circuit breaker may be used to protect two or more branch circuits, if the circuit breaker is adjusted to afford overcurrent protection for the smallest conductor.

§ 75.800–3 Testing, examination and maintenance of circuit breakers; procedures.

(a) Circuit breakers and their auxiliary devices protecting underground high-voltage circuits shall be tested and examined at least once each month by a person qualified as provided in § 75.153;

(b) Tests shall include:

(1) Breaking continuity of the ground check conductor, where ground check monitoring is used; and

(2) Actuating at least two (2) of the auxiliary protective relays.

(c) Examination shall include visual observation of all components of the circuit breaker and its auxiliary devices, and such repairs or adjustments as are indicated by such tests and examinations shall be carried out immediately.

§ 75.800–4 Testing, examination and maintenance of circuit breakers; record.

The operator of any coal mine shall maintain a written record of each test, examination, repair, or adjustment of all circuit breakers protecting high voltage circuits which enter any underground area of the coal mine. Such record shall be kept in a book approved by the Secretary.

§ 75.801 Grounding resistors.

[STATUTORY PROVISIONS]

The grounding resistor, where required, shall be of the proper ohmic value to limit the voltage drop in the grounding circuit external to the resistor to not more than 100 volts under fault conditions. The grounding resistor shall be rated for maximum fault current continuously and insulated from ground for a voltage equal to the phase-to-phase voltage of the system.

§ 75.802 Protection of high-voltage circuits extending underground.

[STATUTORY PROVISIONS]

High-voltage circuits extending underground and supplying portable, mobile, or stationary high-voltage equipment shall contain either a direct or derived neutral which shall be grounded through a suitable resistor at the source transformers, and a grounding circuit, originating at the grounded side of the grounding resistor, shall extend along with the power conductors and serve as a grounding conductor for the frames of all high-voltage equipment supplied power from that circuit, except that the Secretary or his authorized representative may permit ungrounded high-voltage circuits to be extended underground to feed stationary electrical equipment if such circuits are either steel armored or installed in grounded, rigid steel conduit throughout their entire length, and upon his finding that such exception does not pose a hazard to the miners. Within 100 feet of the point on the surface where high-voltage circuits enter the underground portion of the mine, disconnecting devices shall be installed and so equipped or designed in such a manner that it can be determined by visual observation that the power is disconnected, except that the Secretary or his authorized representative may permit such devices to be installed at a greater distance from such area of the mine if he determines, based on existing physical conditions, that such installation will be more accessible at a greater distance and will not pose any hazard to the miners.

§ 75.803 Fail safe ground check circuits on high-voltage resistance grounded systems.

[STATUTORY PROVISIONS]

On and after September 30, 1970, high-voltage, resistance grounded systems shall include a fail safe ground check circuit to monitor continuously the grounding circuit to assure continuity and the fail safe ground check circuit shall cause the circuit breaker to open when either the ground or pilot check wire is broken, or other no less effective device approved by the Secretary or his authorized representative to assure such continuity, except that an extension of time, not in excess of 12 months, may be permitted by the Secretary on a mine-by-mine basis if he determines that such equipment is not available.

§ 75.803–1 Maximum voltage ground check circuits.

The maximum voltage used for ground check circuits under § 75.803 shall not exceed 96 volts.

§ 75.803–2 Ground check systems not employing pilot check wires; approval by the Secretary.

Ground check systems not employing pilot check wires will be approved only if it is determined that the system includes a fail safe design causing the circuit breaker to open when ground continuity is broken.

§ 75.803–3 High-voltage ground check circuits; extension of time for noncompliance.

Upon written application an extension of time may be granted for a period not to exceed 12 months after September 30, 1970, if the operator submits evidence showing that the necessary components required for proper compliance have been ordered and are unavailable at the time of such application. Any application for an extension of time under the provisions of this section shall be addressed to the Director, Bureau of Mines, Department of the Interior, Washington, D.C. 20240, and shall set forth the following information:

(a) A list of the component parts ordered;

(b) The manufacturer, distributor, or dealer from whom such parts were ordered;

(c) The date of such order or orders; and,

(d) Expected date of delivery.

§ 75.804 Underground high-voltage cables.

[STATUTORY PROVISIONS]

(a) Underground high-voltage cables used in resistance grounded systems shall be equipped with metallic shields around each power conductor with one or more ground conductors having a total cross-sectional area of not less than one-half the power conductor, and with an insulated internal or external conductor not smaller than No. 8 (A.W.G.) for the ground continuity check circuit.

(b) All such cables shall be adequate for the intended current and voltage. Splices made in such cables shall provide continuity of all components.

§ 75.805 Couplers.

[STATUTORY PROVISIONS]

Couplers that are used with medium-voltage or high-voltage power circuits shall be of the three-phase type with a full metallic shell, except that the Secretary may permit, under such guidelines as he may prescribe, no less effective couplers constructed of materials other than metal. Couplers shall be adequate for the voltage and current expected. All exposed metal on the metallic couplers shall be grounded to the ground conductor in the cable. The coupler shall be constructed so that the ground check continuity conductor shall be broken first and the ground conductors shall be broken last when the coupler is being uncoupled.

§ 75.806 Connection of single-phase loads.

[STATUTORY PROVISIONS]

Single-phase loads, such as transformer primaries, shall be connected phase-to-phase.

§ 75.807 Installation of high-voltage transmission cables.

[STATUTORY PROVISIONS]

All underground high-voltage transmission cables shall be installed only in regularly inspected air courses and haulageways, and shall be covered, buried, or placed so as to afford protection against damage, guarded where men regularly work or pass under them unless they are 6½ feet or more above the floor or rail, securely anchored, properly insulated, and guarded at ends, and covered, insulated, or placed to prevent contact with trolley wires and other low-voltage circuits.

§ 75.808 Disconnecting devices.

[STATUTORY PROVISIONS]

Disconnecting devices shall be installed at the beginning of branch lines in high-voltage circuits and equipped or designed in such a manner that it can be determined by visual observation that the circuit is deenergized when the switches are open.

§ 75.809 Identification of circuit breakers and disconnecting switches.

[STATUTORY PROVISIONS]

Circuit breakers and disconnecting switches underground shall be marked for identification.

§ 75.810 High-voltage trailing cables; splices.

[STATUTORY PROVISIONS]

In the case of high-voltage cables used as trailing cables, temporary splices shall not be used and all permanent splices shall be made in accordance with § 75.-604. Terminations and splices in all other high voltage cables shall be made in accordance with the manufacturer's specifications.

§ 75.811 High-voltage underground equipment; grounding.

[STATUTORY PROVISIONS]

Frames, supporting structures and enclosures of stationary, portable, or mobile underground high-voltage equipment and all high-voltage equipment supplying power to such equipment receiving power from resistance grounded systems shall be effectively grounded to the high-voltage ground.

§ 75.812 Movement of high-voltage power centers and portable transformers; permit.

[STATUTORY PROVISIONS]

Power centers and portable transformers shall be deenergized before they are moved from one location to another, except that, when equipment powered by sources other than such centers or transformers is not available, the Secretary may permit such centers and transformers to be moved while energized, if he determines that another equivalent or greater hazard may otherwise be created, and if they are moved under the supervision of a qualified person, and if such centers and transformers are examined prior to such movement by such person and found to be grounded by methods approved by an authorized representative of the Secretary and otherwise protected from hazards to the miner. A record shall be kept of such examinations. High-voltage cables, other than trailing cables, shall not be moved or handled at any time while energized, except that, when such centers and transformers are moved while energized as permitted under this section, energized high-voltage cables attached to such centers and transformers may be moved only by a qualified person and the operator of such mine shall require that such person wear approved and tested insulated wireman's gloves.

§ 75.812–1 Qualified person.

A person who meets the requirements of § 75.153 is a qualified person within the meaning of § 75.812.

§ 75.812–2 High-voltage power centers and transformers; record of examination.

The operator shall maintain a record of all examinations conducted in accordance with § 75.812. Such record shall be kept in a book approved by the Secretary.

Subpart J—Underground Low- and Medium-Voltage Alternating Current Circuits

§ 75.900 Low- and medium-voltage circuits serving three-phase alternating current equipment; circuit breakers.

[STATUTORY PROVISIONS]

Low- and medium-voltage power circuits serving three-phase alternating current equipment shall be protected by suitable circuit breakers of adequate interrupting capacity which are properly tested and maintained as prescribed by the Secretary. Such breakers shall be equipped with devices to provide protection against undervoltage, grounded phase, short circuit, and overcurrent.

§ 75.900–1 Circuit breakers; location.

Circuit breakers used to protect low- and medium-voltage circuits underground shall be located in areas which are accessible for inspection, examination, and testing, have safe roofs, and are clear of any moving equipment used in haulageways.

§ 75.900–2 Approved circuit schemes.

The following circuit schemes will be regarded as providing the necessary protection to the circuit required by § 75.900:

(a) Ground check relays may be used for undervoltage protection if the relay coils are designed to trip the circuit breaker when line voltage decreases to 40 to 60 percent of the nominal line voltage.

(b) One undervoltage device installed in the main secondary circuit at the source transformer may be used to provide undervoltage protection for each circuit that receives power from that transformer.

(c) One circuit breaker may be used to protect two or more branch circuits if the circuit breaker is adjusted to afford overcurrent protection for the smallest conductor.

(d) Circuit breakers with shunt trip, series trip or undervoltage release devices may be used if the tripping elements of such devices are selected or adjusted in accordance with the settings listed in the Tables of the National Electric Code, 1968.

§ 75.900–3 Testing, examination, and maintenance of circuit breakers; procedures.

Circuit breakers protecting low- and medium-voltage alternating current circuits serving three-phase alternating current equipment and their auxiliary devices shall be tested and examined at least once each month by a person qualified as provided in § 75.153. In performing such tests, actuating any of the circuit breaker auxiliaries or control circuits in any manner which causes the circuit breaker to open, shall be considered a proper test. All components of the circuit breaker and its auxiliary devices shall be visually examined and such repairs or adjustments as are indicated by such tests and examinations shall be carried out immediately.

§ 75.900–4 Testing, examination, and maintenance of circuit breakers; record.

The operator of any coal mine shall maintain a written record of each test, examination, repair, or adjustment of all circuit breakers protecting low- and medium-voltage circuits serving three-phase alternating current equipment used in the mine. Such record shall be kept in a book approved by the Secretary.

§ 75.901 Protection of low- and medium-voltage three-phase circuits used underground.

[STATUTORY PROVISIONS]

(a) Low- and medium-voltage three-phase alternating-current circuits used underground shall contain either a direct or derived neutral which shall be grounded through a suitable resistor at the power center, and a grounding circuit, originating at the grounded side of the grounding resistor, shall extend along with the power conductors and serve as a grounding conductor for the frames of all the electrical equipment supplied power from that circuit, except that the Secretary or his authorized representative may permit ungrounded low- and medium-voltage circuits to be used underground to feed such stationary electrical equipment if such circuits are either steel armored or installed in grounded rigid steel conduit throughout their entire length. The grounding resistor, where required, shall be of the proper ohmic value to limit the ground fault current to 25 amperes. The grounding resistor shall be rated for maximum fault current continuously and insulated from ground for a voltage equal to the phase-to-phase voltage of the system.

§ 75.902 Low- and medium-voltage ground check monitor circuits.

[STATUTORY PROVISIONS]

On or before September 30, 1970, low- and medium-voltage resistance grounded systems shall include a fail-safe ground check circuit to monitor continuously the grounding circuit to assure continuity which ground check circuit shall cause the circuit breaker to open when either the ground or pilot check wire is broken, or other no less effective device approved by the Secretary or his authorized representative to assure such continuity, except that an extension of time, not in excess of 12 months, may be permitted by the Secretary on a mine-by-mine basis if he determines that such equipment is not available. Cable couplers shall be constructed so that the ground

check continuity conductor shall be broken first and the ground conductors shall be broken last when the coupler is being uncoupled.

§ 75.902–1 Maximum voltage ground check circuits.

The maximum voltage used for such ground check circuits shall not exceed 40 volts.

§ 75.902–2 Approved ground check systems not employing pilot check wires.

Ground check systems not employing pilot check wires will be approved only if it is determined that the system includes a fail safe design causing the circuit breaker to open when ground continuity is broken.

§ 75.902–3 Low- and medium-voltage ground check circuit; extension of time for noncompliance.

Upon written application an extension of time may be granted, for a period not to exceed 12 months after September 30, 1970, if the operator submits evidence showing that the necessary components required for proper compliance have been ordered and are unavailable at the time of such application. Any application for extension of time under the provisions of this section shall be addressed to the Director, Bureau of Mines, Department of the Interior, Washington, D.C. 20240 and shall set forth the following information:

(a) A list of the component parts ordered;

(b) The manufacturer, distributor, or dealer from whom such parts were ordered;

(c) The date of such order or orders; and,

(d) Expected delivery date.

§ 75.902–4 Attachment of ground conductors and ground check wires to equipment frames; use of separate connections.

In grounding equipment frames of all stationary, portable or mobile equipment receiving power from resistance grounded systems separate connections shall be used when practicable.

§ 75.903 Disconnecting devices.

[STATUTORY PROVISIONS]

Disconnecting devices shall be installed in conjunction with the circuit breaker to provide visual evidence that the power is disconnected.

§ 75.904 Identification of circuit breakers.

[STATUTORY PROVISIONS]

Circuit breakers shall be marked for identification.

§ 75.905 Connection of single-phase loads.

[STATUTORY PROVISIONS]

Single-phase loads shall be connected phase-to-phase.

§ 75.906 Trailing cables for mobile equipment, ground wires, and ground check wires.

[STATUTORY PROVISIONS]

Trailing cables for mobile equipment shall contain one or more ground conductors having a cross-sectional area of not less than one-half the power conductor, and, on September 30, 1970, an insulated conductor for the ground continuity check circuit or other no less effective device approved by the Secretary or his authorized representative to assure such continuity, except that an extension of time, not in excess of 12 months may be permitted by the Secretary on a mine-by-mine basis if he determines that such equipment is not available. Splices made in the cables shall provide continuity of all components.

§ 75.907 Design of trailing cables for medium-voltage circuits.

[STATUTORY PROVISIONS]

Trailing cables for medium-voltage circuits shall include grounding conductors, a ground check conductor, and grounded metallic shields around each power conductor or a ground metallic shield over the assembly, except that on equipment employing cable reels, cables without shields may be used if the insulation is rated 2,000 volts or more.

Subpart K—Trolley Wires and Trolley Feeder Wires

§ 75.1000 Cutout switches.

[STATUTORY PROVISIONS]

Trolley wires and trolley feeder wires, shall be provided with cutout switches at intervals of not more than 2,000 feet and near the beginning of all branch lines.

§ 75.1001 Overcurrent protection.

[STATUTORY PROVISIONS]

Trolley wires and trolley feeder wires shall be provided with overcurrent protection.

§ 75.1001–1 Devices for overcurrent protection.

Automatic circuit interrupting devices that will deenergize the affected circuit upon occurrence of a short circuit at any point in the system will meet the requirements of § 75.1001.

§ 75.1002 Location of trolley wires, trolley feeder wires, high-voltage cables and transformers.

[STATUTORY PROVISIONS]

Trolley wires and trolley feeder wires, high-voltage cables and transformers shall not be located inby the last open crosscut and shall be kept at least 150 feet from pillar workings.

§ 75.1003 Insulation of trolley wires, trolley feeder wires and bare signal wires; guarding of trolley wires and trolley feeder wires.

[STATUTORY PROVISIONS]

Trolley wires, trolley feeder wires, and bare signal wires shall be insulated adequately where they pass through doors and stoppings, and where they cross other power wires and cables. Trolley wires and trolley feeder wires shall be guarded adequately:

(a) At all points where men are required to work or pass regularly under the wires;

(b) On both sides of all doors and stoppings; and

(c) At man-trip stations.

The Secretary or his authorized representatives shall specify other conditions where trolley wires and trolley feeder wires shall be adequately protected to prevent contact by any person, or shall require the use of improved methods to prevent such contact. Temporary guards shall be provided where trackmen and other persons work in proximity to trolley wires and trolley feeder wires.

§ 75.1003–1 Other requirements for guarding of trolley wires and trolley feeder wires.

Adequate precaution shall be taken to insure that equipment being moved along haulageways will not come in contact with trolley wires or trolley feeder wires.

Subpart L—Fire Protection

§ 75.1100 Requirements.

[STATUTORY PROVISION]

Each coal mine shall be provided with suitable firefighting equipment adapted for the size and conditions of the mine. The Secretary shall establish minimum requirements of the type, quality, and quantity of such equipment.

§ 75.1100–1 Type and quality of firefighting equipment.

Firefighting equipment required under this subpart shall meet the following minimum requirements:

(a) Waterlines: Waterlines shall be capable of delivering 50 gallons of water a minute at a nozzle pressure of 50 pounds per square inch.

(b) Portable water cars: A portable water car shall be of at least 1,000 gallons capacity (500 gallons capacity for anthracite mines) and shall have at least 300 feet of fire hose with nozzles. A portable water car shall be capable of providing a flow through the hose of 50 gallons of water per minute at a nozzle pressure of 50 pounds per square inch.

(c) A portable chemical car shall carry enough chemicals to provide a fire extinguishing capacity equivalent to that of a portable water car.

(d) Portable foam-generating machines or devices: A portable foam-generating machine or device shall have facilities and equipment for supplying the machine with 30 gallons of water per minute at 30 pounds per square inch for a period of 35 minutes.

(e) Portable fire extinguisher: A portable fire extinguisher shall be either (1) a multipurpose dry chemical type containing a nominal weight of 5 pounds of dry powder and enough expellant to apply the powder or (2) a foam-producing type containing at least 2½ gallons of foam-producing liquids and enough

expellant to supply the foam. Only fire extinguishers approved by the Underwriters Laboratories, Inc., or Factory Mutual Research Corp., carrying appropriate labels as to type and purpose, shall be used. After March 30, 1971, all new portable fire extinguishers acquired for use in a coal mine shall have a 2A 10 BC or higher rating.

(f) (1) Except as provided in subparagraph (2) of this paragraph, the fire hose shall be lined with a material having flame resistant qualities meeting requirements for hose in Bureau of Mines' Schedule 2G. The cover shall be polyester, or other material with flame-spread qualities and mildew resistance equal or superior to polyester. The bursting pressure shall be at least 4 times the water pressure at the valve to the hose inlet with the valve closed; the maximum water pressure in the hose nozzle shall not exceed 100 p.s.i.g.

(2) Fire hose installed for use in underground coal mines prior to December 30, 1970, shall be mildew-proof and have a bursting pressure at least 4 times the water pressure at the valve to the hose inlet with the valve closed, and the maximum water pressure in the hose nozzle with water flowing shall not exceed 100 p.s.i.g.

§ 75.1100–2 Quantity and location of firefighting equipment.

(a) *Working sections.* (1) Each working section of coal mines producing 300 tons or more per shift shall be provided with two portable fire extinguishers and 240 pounds of rock dust in bags or other suitable containers; waterlines shall extend to each section loading point and be equipped with enough fire hose to reach each working face unless the section loading point is provided with one of the following:

(i) Two portable water cars; or

(ii) Two portable chemical cars; or

(iii) One portable water car or one portable chemical car, and either (*a*) a portable foam-generating machine or (*b*) a portable high-pressure rock-dusting machine fitted with at least 250 feet of hose and supplied with at least 60 sacks of rock dust.

(2) Each working section of coal mines producing less than 300 tons of coal per shift shall be provided with two portable fire extinguishers, 240 pounds of rock dust in bags or other suitable containers, and at least 500 gallons of water and at least 3 pails of 10 quart capacity. In lieu of the 500 gallon water supply a waterline with sufficient hose to reach the working places, a portable water car (500 gallons capacity) or a portable all-purpose dry powder chemical car of at least 125-pounds capacity may be provided.

(b) *Belt conveyors.* In all coal mines, waterlines shall be installed parallel to the entire length of belt conveyors and shall be equipped with firehose outlets with valves at 300-foot intervals along each belt conveyor and at tailpieces. At least 500 feet of firehose with fittings suitable for connection with each belt conveyor waterline system shall be stored at strategic locations along the belt conveyor. Waterlines may be installed in entries adjacent to the conveyor entry belt as long as the outlets project into the belt conveyor entry.

(c) *Haulage tracks.* (1) In mines producing 300 tons of coal or more per shift waterlines shall be installed parallel to all haulage tracks using mechanized equipment in the track or adjacent entry and shall extend to the loading point of each working section. Waterlines shall be equipped with outlet valves at intervals of not more than 500 feet, and 500 feet of firehose with fittings suitable for connection with such waterlines shall be provided at strategic locations. Two portable water cars, readily available, may be used in lieu of waterlines prescribed under this paragraph.

(2) In mines producing less than 300 tons of coal per shift, there shall be provided at 500-foot intervals in all main and secondary haulage roads:

(i) A tank of water of at least 55-gallon capacity with at least 3 pails of not less than 10-quart capacity; or

(ii) Not less than 240 pounds of bagged rock dust.

(d) *Transportation.* Each track or off-track locomotive, self-propelled man-trip car, or personnel carrier shall be equipped with one portable fire extinguisher.

(e) *Electrical installations.* (1) Two portable fire extinguishers or one extinguisher having at least twice the minimum capacity specified for a portable fire extinguished in § 75.1100–1(e) shall be provided at each permanent electrical installation.

(2) One portable fire extinguisher and 240 pounds of rock dust shall be provided at each temporary electrical installation.

(f) *Oil storage stations.* Two portable fire extinguishers and 240 pounds of rock dust, shall be provided at each permanent underground oil storage station. One portable fire extinguisher shall be provided at each working section where 25 gallons or more of oil are stored in addition to extinguishers required under paragraph (a) of this section.

(g) *Welding, cutting, soldering.* One portable fire extinguisher or 240 pounds of rock dust shall be provided at locations where welding, cutting, or soldering with arc or flame is being done.

(h) *Powerlines.* At each wooden door through which powerlines pass there shall be one portable fire extinguisher or 240 pounds of rock dust within 25 feet of the door on the intake air side.

(i) *Emergency materials.* (1) At each mine producing 300 tons of coal or more per shift there shall be readily available the following materials at locations not exceeding 2 miles from each working section:

1,000 board feet of brattice boards
2 rolls of brattice cloth
2 hand saws
25 pounds of 8d nails
25 pounds of 10d nails
25 pounds of 16d nails
3 claw hammers
25 bags of wood fiber plaster or 10 bags of cement (or equivalent material for stoppings)
5 tons of rock dust

(2) At each mine producing less than 300 tons of coal per shift the above materials shall be available at the mine, provided, however, that the emergency materials for one or more mines may be stored at a central warehouse or building supply company and such supply must be the equivalent of that required for all mines involved and within 1-hour's delivery time from each mine. This exception shall not apply where the active working sections are more than 2 miles from the surface.

§ 75.1100–3 Condition and examination of firefighting equipment.

All firefighting equipment shall be maintained in a usable and operative condition. Chemical extinguishers shall be examined every 6 months and the date of the examination shall be written on a permanent tag attached to the extinguisher.

§ 75.1101 Deluge-type water sprays, foam generators; main and secondary belt-conveyor drives.

[STATUTORY PROVISIONS]

Deluge-type water sprays or foam generators automatically actuated by rise in temperature, or other no less effective means approved by the Secretary of controlling fire, shall be installed at main and secondary belt-conveyor drives.

§ 75.1101–1 Deluge-type water spray systems.

(a) Deluge-type spray systems shall consist of open nozzles attached to branch lines. The branch lines shall be connected to a waterline through a control valve operated by a fire sensor. Actuation of the control valve shall cause water to flow into the branch lines and discharge from the nozzles.

(b) Nozzles attached to the branch lines shall be full cone, corrosion resistant and provided with blow-off dust covers. The spray application rate shall not be less than 0.25 gallon per minute per square foot of the top surface of the top belt and the discharge shall be directed at both the upper and bottom surfaces of the top belt and to the upper surface of the bottom belt.

§ 75.1101–2 Installation of deluge-type sprays.

Deluge-type water spray systems shall provide protection for the belt drive and 50 feet of fire-resistant belt or 150 feet of nonfire-resistant belt adjacent to the belt drive.

§ 75.1101–3 Water requirements.

Deluge-type water spray systems shall be attached to a water supply. Water so supplied shall be free of excessive sediment and noncorrosive to the system. Water pressure shall be maintained consistent with the pipe, fittings, valves, and nozzles at all times. Water systems shall include strainers with a flush-out connection and a manual shut-off valve. The water supply shall be adequate to provide flow for 10 minutes except that pressure tanks used as a source of water supply shall be of 1,000-gallon capacity for a

fire-resistant belt and 3,000 gallons for a nonfire-resistant belt may be provided.

§ 75.1101–4 Branch lines.

As a part of the deluge-type water spray system, two or more branch lines of nozzles shall be installed. The maximum distance between nozzles shall not exceed 8 feet.

§ 75.1101–5 Installation of foam generator systems.

(a) Foam generator systems shall be located so as to discharge foam to the belt drive, belt takeup, electrical controls, gear reducing unit and the conveyor belt.

(b) Foam generator systems shall be equipped with a fire sensor which actuates the system, and each system shall be capable of producing and delivering the following amounts of foam within 5 minutes:

(1) At fire-resistant belt installations, an amount which will fully envelop the belt drive, belt takeup, electrical controls, gear reducing unit, and the conveyor belt over a distance of 50 feet; and,

(2) At nonfire-resistant belt installations, an amount which will fully envelop the belt drive, belt takeup electrical controls, gear reducing unit, and the conveyor belt over a distance of 150 feet.

(c) The foam generator shall be equipped with a warning device designed to stop the belt drive when a fire occurs and all such warning devices shall be capable of giving both an audible and visual signal when actuated by fire.

(d) Water, power, and chemicals required shall be adequate to maintain water or foam flow for no less than 25 minutes.

(e) Water systems shall include strainers with a flush-out connection and a manual shut-off valve.

§ 75.1101–6 Water sprinkler systems; general.

Water sprinkler systems may be installed to protect main and secondary belt-conveyor drives, however, where such systems are employed, they shall be installed and maintained in accordance with §§ 75.1101–7 through 75.1101–11.

§ 75.1101–7 Installation of water sprinkler systems; requirements.

(a) The fire-control components of each water sprinkler system shall be installed, as far as practicable in accordance with the recommendations set forth in National Fire Protection Association 1968–69 edition, Code No. 13, "Installation of Sprinkler Systems" and such systems' components shall be of a type approved by the Underwriters' Laboratories, Inc., Factory Mutual Research Corp.

(b) Each sprinkler system shall provide protection for the motor drive belt takeup, electrical controls, gear reducing unit, and the 50 feet of fire-resistant belt, or 150 feet of nonfire-resistant belt adjacent to the belt drive.

(c) The components of each water sprinkler system shall be located so as to minimize the possibility of damage by roof fall or by the moving belt and its load.

§ 75.1101–8 Water sprinkler systems; arrangement of sprinklers.

(a) At least one sprinkler shall be installed above each belt drive, belt takeup, electrical control, and gear-reducing unit, and individual sprinklers shall be installed at intervals of no more than 8 feet along all conveyor branch lines.

(b) Two or more branch lines, at least one of which shall be above the top belt and one between the top and bottom belt, shall be installed in each sprinkler system to provide a uniform discharge of water to the belt surface.

(c) The water discharge rate from the sprinkler system shall not be less than 0.25 gallon per minute per square foot of the top surface of the top belt and the discharge shall be directed at both the upper and bottom surfaces of the top belt and to the upper surface of the bottom belt. The supply of water shall be adequate to provide a constant flow of water for 10 minutes with all sprinklers functioning.

(d) Each individual sprinkler shall be activated at a temperature of not less than 150° F. and not more than 300° F.

(e) Water systems shall include strainers with a flush-out connection and a manual shut-off valve.

§ 75.1101–9 Back-up water system.

One fire hose outlet together with a length of hose capable of extending to the belt drive shall be provided within 300 feet of each belt drive.

§ 75.1101–10 Water sprinkler systems; fire warning devices at belt drives.

Each water sprinkler system shall be equipped with a device designed to stop the belt drive in the event of a rise in temperature and each such warning device shall be capable of giving both an audible and visual warning when a fire occurs.

§ 75.1101–11 Inspection of water sprinkler systems.

Each water sprinkler system shall be examined weekly and a functional test of the complete system shall be conducted at least once each year.

§ 75.1101–12 Equivalent dry-pipe system.

Where water sprinkler systems are installed to protect main and secondary belt conveyor drives and freezing temperatures prevail, an equivalent dry-pipe system may be installed.

§ 75.1101–13 Dry powder chemical systems; general.

Self-contained dry powder chemical systems may be installed to protect main and secondary belt conveyor drives, however, where such systems are employed, they shall be installed and maintained in accordance with the provisions of §§ 75.1101–14 through 75.1101–22.

§ 75.1101–14 Installation of dry powder chemical systems.

(a) Self-contained dry powder chemical systems shall be installed to protect each belt-drive, belt takeup, electrical-controls, gear reducing units and 50 feet of fire-resistant belt or 150 feet of nonfire-resistant belt adjacent to the belt drive .

(b) The fire-control components of each dry powder chemical system shall be a type approved by the Underwriters' Laboratories, Inc., or Factory Mutual Engineering Corp.

(c) The components of each dry powder chemical system shall be located so as to minimize the possibility of damage by roof fall or by the moving belt and its load.

§ 75.1101–15 Construction of dry powder chemical systems.

(a) Each self-contained dry powder system shall be equipped with hose or pipe lines which are no longer than necessary.

(b) Metal piping and/or hose between control valves and nozzles shall have a minimum bursting pressure of 500 p.s.i.g.

(c) Hose shall be protected by wire braid or its equivalent.

(d) Nozzles and reservoirs shall be sufficient in number to provide maximum protection to each belt, belt takeup, electrical controls, and gear reducing unit.

(e) Each belt shall be protected on the top surface of both the top and bottom belts and the bottom surface of the top belt.

§ 75.1101–16 Dry powder chemical systems; sensing and fire-suppression devices.

(a) Each self-contained dry powder chemical system shall be equipped with sensing devices which shall be designed to activate the fire-control system, sound an alarm and stop the conveyor drive motor in the event of a rise in temperature, and provision shall be made to minimize contamination of the lens of any optical sensing device installed in such system.

(b) Where sensors are operated from the same power source as the belt drive, each sensor shall be equipped with a standby power source which shall be capable of remaining operative for at least 4 hours after a power cutoff.

(c) Sensor systems shall include a warning indicator (or test circuit) which shows it is operative.

(d) Each fire-suppression system shall be equipped with a manually operated control valve which shall be independent of the sensor.

§ 75.1101–17 Sealing of dry powder chemical systems.

Each dry powder chemical system shall be adequately sealed to protect all components of the system from moisture, dust, and dirt.

§ 75.1101–18 Dry powder requirements.

Each dry powder chemical system shall contain the following minimum amounts of multipurpose dry powder:

Belt	*Dry powder, pounds*
Fire resistant	125
Non-fire resistant	250

§ 75.1101–19 Nozzles; flow rate and direction.

The nozzles of each dry powder chemical system shall be capable of discharging all powder within 1 minute after actuation of the system and such nozzles shall be directed so as to minimize the effect of ventilation upon fire control.

§ 75.1101–20 Safeguards for dry powder chemical systems.

Adequate guards shall be provided along all belt conveyors in the vicinity of each dry powder chemical system to protect persons whose vision is restricted by a discharge of powder from the system. In addition, hand-rails shall be installed in such areas to provide assistance to those passing along the conveyor after a powder discharge.

§ 75.1101–21 Back-up water system.

One fire hose outlet together with a length of hose capable of extending to the belt drive shall be provided within 300 feet of each belt drive.

§ 75.1101–22 Inspection of dry powder chemical systems.

(a) Each dry powder chemical system shall be examined weekly and a functional test of the complete system shall be conducted at least once each year.

(b) Where the dry powder chemical system has been actuated, all components of the system shall be cleaned immediately by flushing all powder from pipes and hoses and all hose damaged by fire shall be replaced.

§ 75.1102 Slippage and sequence switches.

[STATUTORY PROVISIONS]

Underground belt conveyors shall be equipped with slippage and sequence switches.

§ 75.1103 Automatic fire warning devices.

[STATUTORY PROVISIONS]

On or before May 29, 1970, devices shall be installed on all such belts which will give a warning automatically when a fire occurs on or near such belt. The Secretary shall prescribe a schedule for installing fire suppression devices on belt haulageways.

§ 75.1103–1 Automatic fire sensors.

A fire sensor system shall be installed on each underground belt conveyor. Sensors so installed shall be of a type which will (a) give warning automatically when a fire occurs on or near such belt; (b) provide both audible and visual signals that permit rapid location of the fire.

§ 75.1104 Underground storage, lubricating oil and grease.

[STATUTORY PROVISIONS]

Underground storage places for lubricating oil and grease shall be of fireproof construction. Except for specially prepared materials approved by the Secretary, lubricating oil and grease kept in all underground areas in a coal mine shall be in fireproof, closed metal containers or other no less effective containers approved by the Secretary.

§ 75.1105 Housing of underground transformer stations, battery-charging stations, substations, compressor stations, shops, and permanent pumps.

[STATUTORY PROVISIONS]

Underground transformer stations, battery-charging stations, substations, compressor stations, shops, and permanent pumps shall be housed in fireproof structures or areas. Air currents used to ventilate structures or areas enclosing electrical installations shall be coursed directly into the return. Other underground structures installed in a coal mine as the Secretary may prescribe shall be of fireproof construction.

§ 75.1106 Welding, cutting, or soldering with arc or flame underground.

[STATUTORY PROVISIONS]

All welding, cutting, or soldering with arc or flame in all underground areas of a coal mine shall, whenever practicable, be conducted in fireproof enclosures. Welding, cutting, or soldering with arc or flame in other than a fireproof enclosure shall be done under the supervision of a qualified person who shall make a diligent search for fire during and after such operations and shall, immediately before and during such operations, continuously test for methane with means approved by the Secretary for detecting methane. Welding, cutting, or soldering shall not be conducted in air that contains 1.0 volume per centum or more of methane. Rock dust or suitable fire extinguishers shall be immediately available during such welding, cutting, or soldering.

§ 75.1106–1 Test for methane.

Until December 31, 1970, a permissible flame safety lamp may be used to make tests for methane required by the regulations in this part. On and after December 31, 1970 a methane detector approved by the Secretary shall be used for such tests and a permissible flame safety lamp may be used as a supplemental testing device. A person qualified to test for methane under § 75.151 will be a qualified person for the purpose of this section.

§ 75.1107 Fire suppression devices.

[STATUTORY PROVISIONS]

On and after March 30, 1971, fire-suppression devices meeting specifications prescribed by the Secretary shall be installed on unattended underground equipment and suitable fire-resistant hydraulic fluids approved by the Secretary shall be used in the hydraulic systems of such equipment. Such fluids shall be used in the hydraulic systems of other underground equipment unless fire suppression devices meeting specifications prescribed by the Secretary are installed on such equipment.

§ 75.1108 Flame-resistant conveyor belts.

[STATUTORY PROVISIONS]

On and after March 30, 1970, all conveyor belts acquired for use underground shall meet the requirements to be established by the Secretary for flame-resistant conveyor belts.

§ 75.1108–1 Approved conveyor belts.

Conveyor belts which have been approved as flame-resistant by the Bureau of Mines under Part 18 of this chapter (Bureau of Mines Schedule 2G) meet the requirements of § 75.1108.

Subpart M—Maps

§ 75.1200 Mine map.

[STATUTORY PROVISIONS]

The operator of a coal mine shall have in a fireproof repository located in an area on the surface of the mine chosen by the mine operator to minimize the danger of destruction by fire or other hazard, an accurate and up-to-date map of such mine drawn on scale. Such map shall show:

(a) The active workings;

(b) All pillared, worked out, and abandoned areas, except as provided in this section;

(c) Entries and aircourses with the direction of airflow indicated by arrows;

(d) Contour lines of all elevations;

(e) Elevations of all main and cross or side entries;

(f) Dip of the coalbed;

(g) Escapeways;

(h) Adjacent mine workings within 1,000 feet;

(i) Mines above or below;

(j) Water pools above; and

(k) Either producing or abandoned oil and gas wells located within 500 feet of such mine and any underground area of such mine; and,

(l) Such other information as the Secretary may require. Such map shall identify those areas of the mine which have been pillared, worked out, or abandoned, which are inaccessible or cannot be entered safely and on which no information is available.

§ 75.1200–1 Additional information on mine map.

Additional information required to be shown on mine maps under § 75.1200 shall include the following:

(a) Name and address of the mine;

(b) The scale and orientation of the map;

(c) The property or boundary lines of the mine;

(d) All drill holes that penetrate the coalbed being mined;

(e) All shaft, slope, drift, and tunnel openings and auger and strip mined areas of the coalbed being mined;

(f) The location of all surface mine ventilation fans; the location may be designated on the mine map by symbols;

(g) The location of railroad tracks and public highways leading to the mine, and mine buildings of a permanent nature with identifying names shown;

(h) The location and description of at least two permanent base line points coordinated with the underground and surface mine traverses, and the location and description of at least two permanent elevation bench marks used in connection with establishing or referencing mine elevation surveys;

(i) The location of any body of water dammed in the mine or held back in any portion of the mine; provided, however, such bodies of water may be shown on overlays or tracings attached to the mine maps used to show contour lines as provided under paragraph (m) of this section;

(j) The elevations of tops and bottoms of shafts and slopes, and the floor at the entrance to drift and tunnel openings;

(k) The elevation of the floor at intervals of not more than 200 feet in:

(1) At least one entry of each working section, and main and cross entries;

(2) The last line of open crosscuts of each working section, and main and cross entries before such sections and main and cross entries are abandoned;

(3) Rooms advancing toward or adjacent to property or boundary lines or adjacent mines;

(l) The elevation of any body of water dammed in the mine or held back in any portion of the mine; and,

(m) Contour lines passing through whole number elevations of the coalbed being mined. The spacing of such lines shall not exceed 10-foot elevation levels, except that a broader spacing of contour lines may be approved by the District Manager for steeply-pitching coalbeds. Contour lines may be placed on overlays or tracings attached to mine maps.

§ 75.1200–2 Accuracy and scale of mine maps.

(a) The scale of mine maps submitted to the Secretary shall not be less than 100 or more than 500 feet to the inch.

(b) Mine traverses shall be advanced by closed loop methods of traversing or other equally accurate methods of traversing.

§ 75.1201 Certification.

[STATUTORY PROVISIONS]

Such map shall be made or certified by a registered engineer or a registered surveyor of the State in which the mine is located.

§ 75.1202 Temporary notations, revisions, and supplements.

[STATUTORY PROVISIONS]

Such map shall be kept up-to-date by temporary notations and such map shall be revised and supplemented at intervals prescribed by the Secretary on the basis of a survey made or certified by such engineer or surveyor.

§ 75.1202–1 Temporary notations, revisions, and supplements.

(a) Mine maps shall be revised and supplemented at intervals of not more than 6 months.

(b) Temporary notations shall include:

(1) The location of each working face of each working place;

(2) Pillars mined or other such second mining;

(3) Permanent ventilation controls constructed or removed, such as seals, overcasts, undercasts, regulators, and permanent stoppings, and the direction of air currents indicated;

(4) Escapeways designated by means of symbols.

§ 75.1203 Availability of mine map.

[STATUTORY PROVISIONS]

The coal mine map and any revision and supplement thereof shall be available for inspection by the Secretary or his authorized representative, by coal mine inspectors of the State in which the mine is located, by miners in the mine and their representatives and by operators of adjacent coal mines and by persons owning, leasing, or residing on surface areas of such mines or areas adjacent to such mines. The operator shall furnish to the Secretary or his authorized representative and to the Secretary of Housing and Urban Development, upon request, one or more copies of such maps and any revision and supplement thereof. Such map or revision and supplement thereof shall be kept confidential and its contents shall not be divulged to any other person, except to the extent necessary to carry out the provisions of this Act and in connection with the functions and responsiblities of the Secretary of Housing and Urban Development.

§ 75.1204 Mine closure; filing of map with Secretary.

[STATUTORY PROVISIONS]

Whenever an operator permanently closes or abandons a coal mine, or temporarily closes a coal mine for a period of more than 90 days, he shall promptly notify the Secretary of such closure. Within 60 days of the permanent closure or abandonment of the mine, or, when the mine is temporarily closed, upon the expiration of a period of 90 days from the date of closure, the operator shall file with the Secretary a copy of the mine map revised and supplemented to the date of the closure. Such copy of the mine map shall be certified by a registered surveyor or registered engineer of the State in which the mine is located and shall be available for public inspection.

§ 75.1204–1 Places to give notice and file maps.

Operators shall give notice of mine closures and file copies of maps with the Coal Mine Safety District Office for the district in which the mine is located.

Subpart N—Blasting and Explosives

§ 75.1300 Black blasting powder; mudcaps.

[STATUTORY PROVISIONS]

Black blasting powder shall not be stored or used underground. Mudcaps (adobes) or other unconfined shots shall not be fired underground.

§ 75.1301 Separate containers for explosives and detonators.

[STATUTORY PROVISIONS]

Explosives and detonators shall be kept in separate containers until immediately before blasting.

§ 75.1302 Blasting in underground anthracite mines.

[STATUTORY PROVISIONS]

In underground anthracite mines:

(a) Mudcaps or other open, unconfined shake shots may be fired, if restricted to battery starting when methane or a fire hazard is not present, and if it is otherwise impracticable to start the battery;

(b) Open unconfined shake shots in pitching veins may be fired, when no methane or fire hazard is present, if the taking down of loose-hanging coal by other means is too hazardous; and

(c) Tests for methane shall be made immediately before such shots are fired and if 1.0 volume per centum or more of methane is present, when tested, such shot shall not be made until the methane content is reduced below 1.0 volume per centum.

§ 75.1303 Permissible explosives, detonators, blasting devices and shot firing units; stemming boreholes.

[STATUTORY PROVISIONS]

Except as provided in this section, in all underground areas of a coal mine only permissible explosives, electric detonators of proper strength, and permissible blasting devices shall be used and all explosives and blasting devices shall be used in a permissible manner. Permissible explosives shall be fired only with permissible shot firing units. Only incombustible materials shall be used for stemming boreholes. The Secretary may, under such safeguards as he may prescribe, permit the firing of more than 20 shots and allow the use of nonpermissible explosives in sinking shafts and slopes from the surface in rock. Nothing in this subpart shall prohibit the use of compressed air blasting.

§ 75.1303–1 Use of nonpermissible shot-firing units; permits for use; procedures and safeguards.

(a) Where the Coal Mine Health and Safety District Manager has determined that the firing of more than 20 shots of permissible explosives will be necessary to reduce the overall hazard to which miners are exposed during underground blasting, he may, in writing, permit the use of nonpermissible shot-firing units if he finds that a permissible shot-firing unit does not have adequate blasting capacity and that the use of such permissible units will create any of the following development or construction hazards.

(1) Exposure to disturbed roof in an adjacent cavity while scaling and supporting the remaining roof prior to wiring a new series of shots;

(2) Exposure to underburden shots where prior shots have removed the burden adjacent to a remaining borehole;

(3) Exposure to an unsupported roof while redrilling large fragmented roof rock following the loss of predrilled boreholes during earlier blasting operations; and,

(4) Any other hazard created by the use of permissible shot-firing units during underground development or construction.

(b) Applications for permits for the use of nonpermissible shot-firing units shall be submitted in writing to the Coal Mine Health and Safety District Manager for the district in which the mine is located and shall contain the following information:

(1) The name and address of the mine;

(2) The active workings in the mine in which such units will be used and the approximate number of shots to be fired;

(3) The period during which such units are to be used;

(4) The nature of the development or construction for which they will be used, e.g., overcasts, undercasts, track grading, roof brushing or boomholes;

(5) A plan, proposed by the operator designed to protect miners in the mine from the hazards of methane and other explosive gases during each multiple shot, e.g., changes in the mine ventilation system, provisions for auxiliary ventilation and any other safeguards necessary to minimize such hazards.

(6) A statement of the specific hazards anticipated by the operator in blasting for overcasts, undercasts, track grading, brushing of roof, boomholes or other unusual blasting situations such as coalbeds of abnormal thickness.

(7) The method to be employed in the use of nonpermissible shot-firing units to avoid the dangers anticipated during development or construction which will ensure the protection of life and the prevention of injuries to the miners exposed to such underground blasting.

(c) (1) Permits for the use of nonpermissible shot-firing units shall be issued on a mine-by-mine basis for periods of time to be specified by the District Manager.

(2) Permits issued under the provisions of this § 75.1303–1 shall specify and include as a condition of their use, any safeguards, in addition to those proposed by the operator, which the Health and Safety District Manager issuing such permit has determined will be required to safeguard the welfare of the miners employed in the mine at the time of the blasting permitted.

§ 75.1304 Persons carrying explosives or detonators underground.

[STATUTORY PROVISIONS]

Explosives or detonators carried anywhere underground in a coal mine by any person shall be in containers constructed of nonconductive material, maintained in good condition, and kept closed.

§ 75.1305 Transporting explosives or detonators.

[STATUTORY PROVISIONS]

Explosives or detonators shall be transported in special closed containers:

(a) In cars moved by means of a locomotive or rope;

(b) On belts;

(c) In shuttle cars; or

(d) In equipment designed especially to transport such explosives or detonators.

§ 75.1306 Storage of explosives and detonators underground for one or more working sections.

[STATUTORY PROVISIONS]

When supplies of explosives and detonators for use in one or more working sections are stored underground, they shall be kept in section boxes or magazines of substantial construction with no metal exposed on the inside, located at least 25 feet from roadways and power wires, and in a dry, well rock-dusted location protected from falls of roof, except in pitching beds, where it is not possible to comply with the location requirement, such boxes shall be placed in niches cut into the solid coal or rock.

§ 75.1307 Storage of explosives and detonators in underground working places.

[STATUTORY PROVISIONS]

Explosives and detonators stored in the working places shall be kept in separate closed containers which shall be located out of the line of blast and not less than 50 feet from the working face and 15 feet from any pipeline, powerline, rail, or conveyor, except that, if kept in niches in the rib, the distance from any pipeline, powerline, rail, or conveyor shall be at least 5 feet. Such explosives and detonators, when stored, shall be separated by a distance of at least 5 feet.

§ 75.1308 Examinations for fires after blasting.

[STATUTORY PROVISIONS]

After every blasting operation, an examination shall be made to determine whether fires have been started.

Subpart O—Hoisting and Mantrips

§ 75.1400 Hoisting equipment; general.

[STATUTORY PROVISIONS]

Every hoist used to transport persons at a coal mine shall be equipped with overspeed, overwind, and automatic stop controls. Every hoist-handling platforms, cages, or other devices used to transport persons shall be equipped with brakes capable of stopping the fully loaded platform, cage, or other device; with hoisting cable adequately strong to sustain the fully loaded platform, cage, or other device; and have a proper margin of safety. Cages, platforms, or other devices which are used to transport persons in shafts and slopes shall be equipped with safety catches or other no less effective devices approved by the Secretary that act quickly and effectively in an emergency, and such catches shall be tested at least once every 2 months. Hoisting equipment, including automatic elevators, that is used to transport persons shall be examined daily. Where persons are transported into, or out of, a coal mine by hoists, a qualified hoisting engineer shall be on duty while any person is underground, except that no such engineer shall be required for automatically operated cages, platforms, or elevators.

§ 75.1400–1 Hoists; brakes, capability.

Brakes on hoists used to transport persons shall be capable of stopping and holding the fully loaded platform, cage, or other device at any point in the shaft, slope, or incline.

§ 75.1400–2 Hoists; tests of safety catches; records.

A record shall be made in a book of the tests, required by § 75.1400, of the safety catches or other devices approved by the Secretary. Each entry shall be signed by the person making the tests and countersigned by a responsible official.

§ 75.1400–3 Daily examination of hoisting equipment.

The daily examination required by § 75.1400, of hoisting equipment, including automatic elevators shall include but not be limited to the following:

(a) A visual examination of the rope for wear, broken wires, and corrosion, especially at excessive strain points, such as near the attachments, where the rope rests on the sheaves and where the rope leaves the drum at both ends.

(b) An examination of the rope fastenings for defects.

(c) An examination of safety catches.

(d) An examination of the cage, platforms, elevators, or other devices for loose, missing, or defective parts.

(e) An examination of the head sheaves to check for broken flanges, defective bearings, rope alignment, and proper lubrication.

(f) An observation of the lining and all other equipment and appurtenances installed in the shaft.

§ 75.1400–4 Daily examinations of hoisting equipment; records.

Records of the daily examinations of hoisting equipment required by § 75.1400 shall be kept listing all items examined. Daily entries shall be signed by the person or persons making examinations. The reports of the examinations shall be read and countersigned by a responsible company official daily.

§ 75.1401 Hoists; rated capacities; ropes; indicators.

[STATUTORY PROVISIONS]

Hoists shall have rated capacities consistent with the loads handled and the recommended safety factors of the ropes used. An accurate and reliable indicator of the position of the cage, platform, skip, bucket, or cars shall be provided.

§ 75.1401–1 Hoists, standards for ropes.

The American National Standards Institute "Specifications For the Use of Wire Ropes For Mines," M11.1–1960, or the latest revision thereof, shall be used as a guide in the use, selection, installation, and maintenance of wire ropes used for hoisting.

§ 75.1401–2 Hoists; notification of changes affecting rated capacity.

Alterations or changes in a hoist which affect the rated capacity shall be made

only with the approval of the Coal Mine Safety District or Subdistrict Manager.

§ 75.1401–3 Hoists; indicators.

The indicator required by § 17.1401 of this chapter shall be placed so that it is in clear view of the hoisting engineer and shall be checked daily to determine its accuracy.

§ 75.1402 Communication between shaft stations and hoist room.

[STATUTORY PROVISIONS]

There shall be at least two effective methods approved by the Secretary of signaling between each of the shaft stations and the hoist room, one of which shall be a telephone or speaking tube.

§ 75.1402–1 Communication between shaft stations and hoist room.

One of the methods used to communicate between shaft stations and the hoist room shall give signals which can be heard by the hoisting engineer at all times while men are underground.

§ 75.1402–2 Tests of signaling systems.

Signaling systems used for communication between shaft stations and the hoist room shall be tested daily.

§ 75.1403 Other safeguards.

[STATUTORY PROVISIONS]

Other safeguards adequate, in the judgment of an authorized representative of the Secretary, to minimize hazards with respect to transportation of men and materials shall be provided.

§ 75.1403–1 General criteria.

(a) Sections 75.1403–2 through 75.1403–11 set out the criteria by which an authorized representative of the Secretary will be guided in requiring other safeguards on a mine-by-mine basis under § 75.1403. Other safeguards may be required.

(b) The authorized representative of the Secretary shall in writing advise the operator of a specific safeguard which is required pursuant to § 75.1403 and shall fix a time in which the operator shall provide and thereafter maintain such safeguard. If the safeguard is not provided within the time fixed and if it is not maintained thereafter, a notice shall be issued to the operator pursuant to section 104 of the Act.

(c) Nothing in the sections in the § 75.1403 series in this Subpart O precludes the issuance of a withdrawal order because of imminent danger.

§ 75.1403–2 Criteria—Hoists transporting materials; brakes.

Hoists and elevators used to transport materials should be equipped with brakes capable of stopping and holding the fully loaded platform, cage, skip, car, or other device at any point in the shaft, slope, or incline.

§ 75.1403–3 Criteria—Drum clutch; attachment of ropes; cage construction.

(a) The clutch of free-drums on manhoist should be provided with a locking mechanism or interlocked with the brake to prevent the accidental withdrawal of the clutch.

(b) The hoist rope attached to a cage, man car, or trip should be equipped with two bridle chains or cables connected securely to the rope at least 3 feet above the attaching device and to the crosspiece of the cage, man car or trip.

(c) The hoist rope should have at least three full turns on the drum when extended to its maximum working length and should make at least one full turn on the drum shaft or around the spoke of the drum in the case of a free drum, and be fastened securely.

(d) Cages used for hoisting men should be constructed with the sides enclosed to a height of at least 6 feet and should have gates, safety chains, or bars across the ends of the cage when men are being hoisted or lowered.

(e) Self-dumping cages, platforms, or other devices used for transportation of men should have a locking device to prevent tilting when men are transported thereon.

(f) An attendant should be on duty at the surface when men are being hoisted or lowered at the beginning and end of each operating shift.

(g) Precautions should be taken to protect persons working in shaft sumps.

(h) Workmen should wear safety belts while doing work in or over shafts.

§ 75.1403–4 Criteria—Automatic elevators.

(a) The doors of automatic elevators should be equipped with interlocking switches so arranged that the elevator car will be immovable while any door is opened or unlocked, and arranged so that such door or doors cannot be inadvertently opened when the elevator car is not at a landing.

(b) A "Stop" switch should be provided in the automatic elevator compartment that will permit the elevator to be stopped at any location in the shaft.

(c) A slack cable device should be used where appropriate on automatic elevators which will automatically shut-off the power and apply the brakes in the event the elevator is obstructed while descending.

(d) Each automatic elevator should be provided with a telephone or other effective communication system by which aid or assistance can be obtained promptly.

§ 75.1403–5 Criteria—Belt conveyors.

(a) Positive-acting stop controls should be installed along all belt conveyors used to transport men, and such controls should be readily accessible and maintained so that the belt can be stopped or started at any location.

(b) Belt conveyors used for regularly scheduled mantrips should be stopped while men are loading or unloading.

(c) All belt conveyors used for the transportation of persons should have a minimum vertical clearance of 18 inches from the nearest overhead projection when measured from the edge of the belt and there should be at least 36 inches of side clearance where men board or leave such belt conveyors.

(d) When men are being transported on regularly scheduled mantrips on belt conveyors the belt speed should not exceed 300 feet per minute when the vertical clearance is less than 24 inches, and should not exceed 350 feet per minute when the vertical clearance is 24 inches or more.

(e) Adequate illumination including colored lights or reflective signs should be installed at all loading and unloading stations. Such colored lights and reflective signs should be so located as to be observable to all persons riding the belt conveyor.

(f) After supplies have been transported on belt conveyors such belts should be examined for unsafe conditions prior to the transportation of men on regularly scheduled mantrips, and belt conveyors should be clear before men are transported.

(g) A clear travelway at least 24 inches wide should be provided on both sides of all belt conveyors installed after March 30, 1970. Where roof supports are installed within 24 inches of a belt conveyor, a clear travelway at least 24 inches wide should be provided on the side of such support farthest from the conveyor.

(h) On belt conveyors that do not transport men, stop and start controls should be installed at intervals not to exceed 1,000 feet. Such controls should be properly installed and positioned so as to be readily accessible.

(i) Telephone or other suitable communications should be provided at points where men or supplies are regularly loaded on or unloaded from the belt conveyors.

(j) Persons should not cross moving belt conveyors, except where suitable crossing facilities are provided.

§ 75.1403–6 Criteria—Self-propelled personnel carriers.

(a) Each self-propelled personnel carrier should:

(1) Be provided with an audible warning device;

(2) Be provided with a sealed-beam headlight, or its equivalent, on each end;

(3) Be provided with reflectors on both ends and sides.

(b) In addition, each track-mounted self-propelled personnel carrier should:

(1) Be provided with a suitable lifting jack and bar, which shall be secured or carried in a tool compartment;

(2) Be equipped with 2 separate and independent braking systems properly installed and well maintained;

(3) Be equipped with properly installed and well-maintained sanding devices, except that personnel carriers (jitneys), which transport not more than 5 men, need not be equipped with such sanding device;

(4) If an open type, be equipped with guards of sufficient strength and height to prevent personnel from being thrown from such carriers.

§ 75.1403–7 Criteria—Mantrips.

(a) Mantrips should be operated independently of any loaded trip, empty trip,

or supply trip and should not be operated within 300 feet of any trip, including another mantrip.

(b) A sufficient number of mantrip cars should be provided to prevent overcrowding of men.

(c) Mantrips should not be pushed.

(d) Where mantrips are operated by locomotives on slopes such mantrips should be coupled to the front and rear by locomotives capable of holding such mantrips. Where ropes are used on slopes for mantrip haulage, such conveyances should be connected by chains, steel ropes, or other effective devices between mantrip cars and the rope.

(e) Safety goggles or eyeshields should be provided for all persons being transported in open-type mantrips.

(f) All trips, including trailers and sleds, should be operated at speeds consistent with conditions and the equipment used, and should be so controlled that they can be stopped within the limits of visibility.

(g) All mantrips should be under the direction of a supervisor and the operator of each mantrip should be familiar with the haulage safety rules and regulations.

(h) Men should proceed in an orderly manner to and from mantrips and no person should be permitted to get on or off a moving mantrip.

(i) Explosives and detonators should not be permitted on any mantrip or hauled within 5 minutes before or after any mantrip.

(j) Mantrips should not be permitted to proceed until the operator of the mantrip is assured that he has a clear road.

(k) Supplies or tools, except small hand tools or instruments, should not be transported with men.

(l) At places where men enter or leave mantrip conveyances, ample clearance should be provided and provisions made to prevent persons from coming in contact with energized electric circuits.

(m) The mine car next to a trolley locomotive should not be used to transport men. Such cars may be used to transport small tools and supplies. This is not to be construed as permitting the transportation of large or bulky supplies such as shuttle car wheel units, or similar material.

(n) Drop-bottom cars used to transport men should have the bottoms secured with an additional locking device.

(o) Extraneous materials or supplies should not be transported on top of equipment; however, materials and supplies that are necessary for or related to the operation of such equipment may be transported on top of such equipment if a hazard is not introduced.

§ 75.1403–8 Criteria—Track haulage roads.

(a) The speed at which haulage equipment is operated should be determined by the condition of the roadbed, rails, rail joints, switches, frogs, and other elements of the track and the type and condition of the haulage equipment.

(b) Track haulage roads should have a continuous clearance on one side of at least 24 inches from the farthest projection of normal traffic. Where it is necessary to change the side on which clearance is provided, 24 inches of clearance should be provided on both sides for a distance of not less than 100 feet and warning signs should be posted at such locations.

(c) Track haulage roads developed after March 30, 1970, should have clearance on the "tight" side of a least 12 inches from the farthest projection of normal traffic. A minimum clearance of 6 inches should be maintained on the "tight" side of all track haulage roads developed prior to March 30, 1970.

(d) The clearance space on all track haulage roads should be kept free of loose rock, supplies, and other loose materials.

(e) Positive stopblocks or derails should be installed on all tracks near the top and at landings of shafts, slopes, and surface inclines.

§ 75.1403–9 Criteria—Shelter holes.

(a) Shelter holes should be provided on track haulage roads at intervals of not more than 105 feet unless otherwise approved by the Coal Mine Safety District Manager(s).

(b) Shelter holes should be readily accessible and should be at least 5 feet in depth, not more than 4 feet in width (except crosscuts used as shelter holes) and at least the height of the coal seam where the coal seam is less than 6 feet high and at least 6 feet in height where the coal seam is 6 feet or more in height.

(c) Shelter holes should be kept free of refuse and other obstructions. Crosscuts used as shelter holes should be kept free of refuse or other materials to a depth of at least 15 feet.

(d) Shelter holes should be provided at all manually operated doors and at switch throws except: (1) At room switches, or (2) at switches where more than 6 feet of side clearance is provided. The Coal Mine Safety District Manager(s) may permit exemption of this requirement if such shelter holes create a hazardous roof condition.

(e) At each underground slope landing where men pass and cars are handled, a shelter hole at least 10 feet in depth, 4 feet in width, and 6 feet in height should be provided.

§ 75.1403–10 Criteria—Haulage; general.

(a) A permissible trip light or other approved device such as reflectors, approved by the Coal Mine Safety District Manager(s), should be used on the rear of trips pulled, on the front of trips pushed and on trips lowered in slopes. However, trip lights or other approved devices need not be used on cars being shifted to and from loading machines, on cars being handled at loading heads, during gathering operations at working faces, when trailing locomotives are used, or on trips pulled by animals.

(b) Cars on main haulage roads should not be pushed, except where necessary to push cars from side tracks located near the working section to the producing entries and rooms, where necessary to clear switches and sidetracks, and on the approach to cages, slopes, and surface inclines.

(c) Warning lights or reflective signs or tapes should be installed along haulage roads at locations of abrupt or sudden changes in the overhead clearance.

(d) No person, other than the motorman and brakeman, should ride on a locomotive unless authorized by the mine foreman, and then only when safe riding facilities are provided. No person should ride on any loaded car or on the bumper of any car. However, the brakeman may ride on the rear bumper of the last car of a slow moving trip pulled by a locomotive.

(e) Positive-acting stopblocks or derails should be used where necessary to protect persons from danger of runaway haulage equipment.

(f) An audible warning should be given by the operator of all self-propelled equipment including off-track equipment, where persons may be endangered by the movement of the equipment.

(g) Locomotives and personnel carriers should not approach to within 300 feet of preceding haulage equipment, except trailing locomotives that are an integral part of the trip.

(h) A total of at least 36 inches of unobstructed side clearance (both sides combined) should be provided for all rubber-tired haulage equipment where such equipment is used.

(i) Off-track haulage roadways should be maintained as free as practicable from bottom irregularities, debris, and wet or muddy conditions that affect the control of the equipment.

(j) Operators of self-propelled equipment should face in the direction of travel.

(k) Mechanical steering and control devices should be maintained so as to provide positive control at all times.

(l) All self-propelled rubber-tired haulage equipment should be equipped with well maintained brakes, lights, and a warning device.

(m) On and after March 30, 1971, all tram control switches on rubber-tired equipment should be designed to provide automatic return to the stop or off position when released.

§ 75.1403–11 Criteria—Entrances to shafts and slopes.

All open entrances to shafts should be equipped with safety gates at the top and at each landing. Such gates should be self-closing and should be kept closed except when the cage is at such landing.

§ 75.1404 Automatic brakes; speed reduction gear.

[STATUTORY PROVISIONS]

Each locomotive and haulage car used in an underground coal mine shall be equipped with automatic brakes, where space permits. Where space does not permit automatic brakes, locomotives and haulage cars shall be subject to speed reduction gear, or other similar devices approved by the Secretary, which are designed to stop the locomotives and haulage cars with the proper margin of safety.

§ 75.1404–1 Braking system.

A locomotive equipped with a dual braking system will be deemed to satisfy the requirements of § 75.1404 for a train comprised of such locomotive and haulage cars, provided the locomotive is operated within the limits of its design capabilities and at speeds consistent with the condition of the haulage road. A trailing locomotive or equivalent devices should be used on trains that are operated on ascending grades.

§ 75.1405 Automatic couplers.

[STATUTORY PROVISIONS]

All haulage equipment acquired by an operator of a coal mine on or after March 30, 1971, shall be equipped with automatic couplers which couple by impact and uncouple without the necessity of persons going between the ends of such equipment. All haulage equipment without automatic couplers in use in a mine on March 30, 1970, shall also be so equipped within 4 years after March 30, 1970.

§ 75.1405–1 Automatic couplers, haulage equipment.

The requirement of § 75.1405 with respect to automatic couplers applies only to track haulage cars which are regularly coupled and uncoupled.

Subpart P—Emergency Shelters

§ 75.1500 Emergency shelters.

[STATUTORY PROVISIONS]

The Secretary or an authorized representative of the Secretary may prescribe in any coal mine that rescue chambers, properly sealed and ventilated, be erected at suitable locations in the mine to which persons may go in case of an emergency for protection against hazards. Such chambers shall be properly equipped with first aid materials, an adequate supply of air and self-contained breathing equipment, an independent communication system to the surface, and proper accommodations for the persons while awaiting rescue, and such other equipment as the Secretary may require. A plan for the erection, maintenance, and revisions of such chambers and the training of the miners in their proper use shall be submitted by the operator to the Secretary for his approval.

Subpart Q—Communications

§ 75.1600 Communications.

[STATUTORY PROVISIONS]

Telephone service or equivalent two-way communication facilities, approved by the Secretary or his authorized representative, shall be provided between the surface and each landing of main shafts and slopes and between the surface and each working section of any coal mine this is more than 100 feet from a portal.

Subpart R—Miscellaneous

§ 75.1700 Oil and gas wells.

[STATUTORY PROVISIONS]

Each operator of a coal mine shall take reasonable measures to locate oil and gas wells penetrating coalbeds or any underground area of a coal mine. When located, such operator shall establish and maintain barriers around such oil and gas wells in accordance with State laws and regulations, except that such barriers shall not be less than 300 feet in diameter, unless the Secretary or his authorized representative permits a lesser barrier consistent with the applicable State laws and regulations where such lesser barrier will be adequate to protect against hazards from such wells to the miners in such mine, or unless the Secretary or his authorized representative requires a greater barrier where the depth of the mine, other geologic conditions, or other factors warrant such a greater barrier.

§ 75.1701 Abandoned areas, adjacent mines; drilling of boreholes.

[STATUTORY PROVISIONS]

Whenever any working place approaches within 50 feet of abandoned areas in the mine as shown by surveys made and certified by a registered engineer or surveyor, or within 200 feet of any other abandoned areas of the mine which cannot be inspected and which may contain dangerous accumulations of water or gas, or within 200 feet of any workings of an adjacent mine, a borehole or boreholes shall be drilled to a distance of at least 20 feet in advance of the working face of such working place and shall be continually maintained to a distance of at least 10 feet in advance of the advancing working face. When there is more than one borehole, they shall be drilled sufficiently close to each other to insure that the advancing working face will not accidentally hole through into abandoned areas or adjacent mines. Boreholes shall also be drilled not more than 8 feet apart in the rib of such working place to a distance of at least 20 feet and at an angle of 45 degrees. Such rib holes shall be drilled in one or both ribs of such working place as may be necessary for adequate protection of miners in such place.

§ 75.1702 Smoking; prohibition.

[STATUTORY PROVISIONS]

No person shall smoke, carry smoking materials, matches, or lighters underground, or smoke in or around oil houses, explosives magazines, or other surface areas where such practice may cause a fire or explosion. The operator shall institute a program, approved by the Secretary, to insure that any person entering the underground area of the mine does not carry smoking materials, matches, or lighters.

§ 75.1702–1 Smoking programs.

Programs required under § 75.1702 shall be submitted to the Coal Mine Safety District Manager for approval on or before May 30, 1970.

§ 75.1703 Portable electric lamps.

[STATUTORY PROVISIONS]

Persons underground shall use only permissible electric lamps approved by the Secretary for portable illumination. No open flame shall be permitted in the underground area of any coal mine, except as permitted under § 75.1106.

§ 75.1703–1 Permissible lamps.

Lamps approved by the Bureau of Mines under Part 19 or Part 20 of this chapter (Bureau of Mines Schedule 6D and Schedule 10C) are approved lamps for the purposes of § 75.1703.

§ 75.1704 Escapeways.

[STATUTORY PROVISIONS]

Except as provided in §§ 75.1705 and 75.1706, at least two separate and distinct travelable passageways which are maintained to insure passage at all times of any person, including disabled persons, and which are to be designated as escapeways, at least one of which is ventilated with intake air, shall be provided from each working section continuous to the surface escape drift opening, or continuous to the escape shaft or slope facilities to the surface, as appropriate, and shall be maintained in safe condition and properly marked. Mine openings shall be adequately protected to prevent the entrance into the underground area of the mine of surface fires, fumes, smoke, and floodwater. Escape facilities approved by the Secretary or his authorized representative, properly maintained and frequently tested, shall be present at or in each escape shaft or slope to allow all persons, including disabled persons, to escape quickly to the surface in the event of an emergency.

§ 75.1704–1 Escapeways and escape facilities.

This section sets out criteria by which District Managers will be guided in approving escapeways and escape facilities. Escapeways and escape facilities that do not meet these criteria may be approved providing the operator can satisfy the District Manager that such escapeways and facilities will enable miners to escape quickly to the surface in the event of an emergency.

(a) Except in situations where the height of the coalbed is less than 5 feet, escapeways should be maintained at a height of at least 5 feet (excluding necessary roof support) and the travelway in such escapeway should be maintained at a width of at least 6 feet. In those situations where the height of the coalbed is less than 5 feet the escapeway should be maintained to the height of the coalbed (excluding any necessary roof support) and the travelway in such escapeways should be maintained at a width of at least 6 feet.

(b) Each escape shaft which is more than 20 feet deep shall include elevators, hoists, cranes, or other such equipment, which shall be equipped with cages and buckets. When such facilities are not automatically operated, an attendant shall be on duty during any coal-producing or maintenance shift. An "attendant" as used in this subsection means a person located on the surface in a position where it is possible to hear or see a

signal calling for the use of such facilities and who is readily available to operate such facilities or to readily obtain another person to operate such facilities.

(c) Stairways shall be installed in all escape shafts which are 20 feet or less in depth; however, in shafts 5 feet or less in depth, ladders may be substituted for stairways. Stairways and ladders shall be installed and maintained as follows:

(1) Stairways shall be of substantial construction, set on an angle not greater than 45 degrees with the horizontal and equipped on the open side with suitable handrails. Where landing platforms are necessary, they shall be at least 2 feet wide and 4 feet long and properly railed.

(2) Ladders shall be anchored securely, set on an angle of not more than 60 degrees and be substantially constructed and maintained in good condition.

§ 75.1705 Opening new mines.

[STATUTORY PROVISIONS]

When new coal mines are opened, not more than 20 miners shall be allowed at any one time in any mine until a connection has been made between the two mine openings, and such connections shall be made as soon as possible.

§ 75.1706 Final mining of pillars.

[STATUTORY PROVISIONS]

When only one mine opening is available, owing to final mining of pillars, not more than 20 miners shall be allowed in such mine at any one time, and the distance between the mine opening and working face shall not exceed 500 feet.

§ 75.1707 Escapeways; intake air; separation from belt and trolley haulage entries.

[STATUTORY PROVISIONS]

In the case of all coal mines opened on or after March 30, 1970, and in the case of all new working sections opened on or after such date in mines opened prior to such date, the escapeway required by this section to be ventilated with intake air shall be separated from the belt and trolley haulage entries of the mine for the entire length of such entries to the beginning of each working section, except that the Secretary or his authorized representative may permit such separation to be extended for a greater or lesser distance so long as such extension does not pose a hazard to the miners.

§ 75.1707–1 New working section.

The term "new working section" as used in § 75.1707 means any extension of the belt or trolley haulage system in main, cross, and room entries necessary for the development of the mine on and after March 30, 1970. Room entries being developed as of March 30, 1970, with certified stop line limitations as shown on the mine map and retreating panels shall not be considered as new working sections.

§ 75.1708 Surface structures, fireproofing.

[STATUTORY PROVISIONS]

After March 30, 1970, all structures erected on the surface within 100 feet of any mine opening shall be of fireproof construction. Unless structures existing on or prior to such date which are located within 100 feet of any mine opening are of such construction, fire doors shall be erected at effective points in mine openings to prevent smoke or fire from outside sources endangering miners underground. These doors shall be tested at least monthly to insure effective operation. A record of such tests shall be kept in an area on the surface of the mine chosen by the operator to minimize the danger of destruction by fire or other hazard and shall be available for inspection by interested persons.

§ 75.1708–1 Surface structures; fireproof construction.

Structures of fireproof construction is interpreted to mean structures with fireproof exterior surfaces.

§ 75.1709 Accumulations of methane and coal dust on surface coal-handling facilities.

[STATUTORY PROVISIONS]

Adequate measures shall be taken to prevent methane and coal dust from accumulating in excessive concentrations in or on surface coal-handling facilities, but in no event shall methane be permitted to accumulate in concentrations in or on surface coal-handling facilities in excess of limits established for methane by the Secretary on and after March 30, 1971. Where coal is dumped at or near air-intake openings, provisions shall be made to avoid dust from entering the mine.

§ 75.1710 Canopies or cabs; electric face equipment.

[STATUTORY PROVISIONS]

An authorized representative of the Secretary may require in any coal mine where the height of the coalbed permits that electric face equipment, including shuttle cars, be provided with substantially constructed canopies, or cabs, to protect the miners operating such equipment from roof falls and from rib and face rolls.

§ 75.1711 Sealing of mines.

[STATUTORY PROVISIONS]

On or after March 30, 1970, the opening of any coal mine that is declared inactive by the operator, or is permanently closed, or abandoned for more than 90 days, shall be sealed by the operator in a manner prescribed by the Secretary. Openings of all other mines shall be adequately protected in a manner prescribed by the Secretary to prevent entrance by unauthorized persons.

§ 75.1711–1 Sealing of shaft openings.

Shaft openings required to be sealed under § 75.1711 shall be effectively capped or filled. Filling shall be for the entire depth of the shaft and, for the first 50 feet from the bottom of the coalbed, the fill shall consist of incombustible material. Caps consisting of a 6-inch thick concrete cap or other equivalent means may be used for sealing. Caps shall be equipped with a vent pipe at least 2 inches in diameter extending for a distance of at least 15 feet above the surface of the shaft.

§ 75.1711–2 Sealing of slope or drift openings.

Slope or drift openings required to be sealed under § 75.1711 shall be sealed with solid, substantial, incombustible material, such as concrete blocks, bricks or tile, or shall be completely filled with incombustible material for a distance of at least 25 feet into such openings.

§ 75.1711–3 Openings of active mines.

The openings of all mines not declared by the operator, to be inactive, permanently closed, or abandoned for less than 90 days shall be adequately fenced or posted with conspicuous signs prohibiting the entrance of unauthorized persons.

§ 75.1712 Bathhouses and toilet facilities.

[STATUTORY PROVISIONS]

The Secretary may require any operator to provide adequate facilities for the miners to change from the clothes worn underground, to provide for the storing of such clothes from shift to shift, and to provide sanitary and bathing facilities. Sanitary toilet facilities shall be provided in the active workings of the mine when such surface facilities are not readily accessible to the active workings.

§ 75.1712–1 Availability of surface bathing facilities; change rooms; and sanitary facilities.

Except where a waiver has been granted pursuant to the provisions of § 75.1712–4, each operator of an underground coal mine shall on and after December 30, 1970, provide bathing facilities, clothing change rooms, and sanitary facilities, as hereinafter prescribed, for the use of the miners at the mine.

§ 75.1712–2 Location of surface facilities.

Bathhouses, change rooms, and sanitary toilet facilities shall be in a location convenient for the use of the miners. Where such facilities are designed to serve more than one mine, they shall be centrally located so as to be as convenient for the use of the miners in all the mines served by such facilities.

§ 75.1712–3 Minimum requirements of surface bathing facilities, change rooms, and sanitary toilet facilities.

(a) All bathing facilities, change rooms, and sanitary toilet facilities shall be provided with adequate light, heat, and ventilation so as to maintain a comfortable air temperature and to minimize the accumulation of moisture and odors, and such facilities shall be maintained in a clean and sanitary condition.

(b) Bathing facilities, change rooms, and sanitary toilet facilities shall be constructed and equipped so as to comply with applicable State and local building codes: *Provided, however,* That where no State or local building codes apply to such facilities, or where no State or local building codes exist, such facilities shall be constructed and equipped so as to

meet the minimum construction requirements of the National Building Code; and the minimum plumbing requirements of the U.S.A. Standard Plumbing Code, ASA A40.8–1955.

(c) In addition to the minimum requirements specified in paragraphs (a) and (b) of this § 75.1712–3, facilities maintained in accordance with § 75.1712–1 shall include the following:

(1) *Bathing facilities.* (i) Showers shall be provided with both hot and cold water.

(ii) At least one shower head shall be provided where five or less miners use such showers.

(iii) Where five or more miners use such showers, sufficient showers shall be furnished to provide approximately one shower head for each five miners.

(iv) A suitable cleansing agent shall be provided for use at each shower.

(2) *Sanitary toilet facilities.* (i) At least one sanitary flush toilet shall be provided where 10 or less miners use such facilities.

(ii) Where 10 or more miners use such sanitary toilet facilities, sufficient toilets shall be furnished to provide approximately one sanitary flush toilet for each 10 miners.

(iii) Where 30 or more miners use sanitary toilet facilities, one urinal may be substituted for one sanitary flush toilet, however, where such substitutions are made they shall not reduce the number of toilets below a ratio of two toilets to one urinal.

(iv) An adequate supply of toilet paper shall be provided with each toilet.

(v) Adequate handwashing facilities or hand lavatories shall be provided in or adjacent to each toilet facility.

(3) *Change rooms.* (i) Individual clothes storage containers or lockers shall be provided for storage of miners clothing and other incidental personal belongings during and between shifts.

(ii) Change rooms shall be provided with ample space to permit the use of such facilities by all miners changing clothes prior to and after each shift.

§ 75.1712–4 Waiver of surface facilities requirements.

The Coal Mine Safety District Manager for the district in which the mine is located may, upon written application by the operator, waive any or all of the requirements of §§ 75.1712–1 through 75.1712–3 if he determines that the operator of the mine cannot or need not meet any part or all of such requirements, and, upon issuance of such waiver, he shall set forth the facilities which will not be required and the specific reason or reasons for such waiver.

§ 75.1712–5 Application for waiver of surface facilities.

Applications for waivers of the requirements of §§ 75.1712–1 through 75.1712–3 shall be filed with the Coal Mine Safety District Manager and shall contain the following information:

(a) The name and address of the mine operator;

(b) The name and location of the mine;

(c) A statement explaining why, in the opinion of the operator, the installation or maintenance of the facilities is impractical or unnecessary.

§ 75.1712–6 Underground sanitary facilities; approved sanitary toilets; installation and maintenance.

(a) Except as provided in § 75.1712–7, each operator of an underground coal mine shall, on and after December 30, 1970, provide and maintain one approved sanitary toilet, together with an adequate supply of toilet tissue, in a dry location under protected roof, within 500 feet of each working place in the mine where miners are regularly employed during the mining cycle. A single approved sanitary toilet may serve two or more working places in the same mine, if it is located within 500 feet of each such working place.

(b) Only sanitary toilets approved by the Health Division, Coal Mine Health and Safety, Bureau of Mines shall meet the requirements of this section.

(c) Applications for approval of sanitary toilets shall be submitted to:

Health Division, Coal Mine Health and Safety, Bureau of Mines, U.S. Department of the Interior, Washington, D.C. 20240.

§ 75.1712–7 Underground sanitary facilities; waiver of requirements.

If it has been determined by the Coal Mine Safety District Manager for the district in which the mine is located that sanitary toilets cannot be provided and maintained within 500 feet of a working place because of the thickness of the coal seam or because of any other physical restriction in the underground workings, he may, upon written application by the operator, waive the location requirements for underground sanitary facilities with respect to such working place.

§ 75.1712–8 Application for waiver of location requirements for underground sanitary facilities.

Applications for waivers of the location requirements of § 75.1712–6 shall be filed with the Coal Mine Safety District Manager and shall contain the following information:

(a) The name and address of the mine operator;

(b) The name and location of the mine;

(c) The thickness of the coal seam in each working place in the mine for which a waiver is requested; and

(d) Other physical restrictions in the mine (for example, poor roof conditions, excessive water, timbering, etc.)

If a sanitary toilet cannot be installed within 500 feet of a working place because of physical conditions other than the thickness of the coal seam, the operator shall also include a short statement specifying areas in the mine which could be considered possible alternative sites for installation of such facilities.

§ 75.1712–9 Issuance of waivers.

Following the receipt of an application submitted in accordance with the provisions of § 75.1712–8, the Coal Mine Safety District Manager shall, if he determines that the operator cannot meet the location requirements of § 75.1712–6 with respect to any or all of the working places in the mine because of the coal seam thickness or because of other physical restriction, issue a waiver of the requirements of this section and designate an alternative site for installation of such facilities. The waiver issued shall specify each working place to which it shall apply, set forth the reasons for such waiver, and the reasons for designation of the alternative site.

§ 75.1712–10 Underground sanitary facilities; maintenance.

Sanitary toilets shall be regularly maintained in a clean and sanitary condition. Holding tanks shall be serviced and cleaned when full and in no case less than once each week by draining or pumping or by removing them to the surface for cleaning or recharging. Transfer tanks and transfer equipment used underground shall be equipped with suitable fittings to permit complete drainage of holding tanks without spillage and allow for the sanitary transportation of wastes to the surface. Waste shall be disposed of on the surface in accordance with State and local laws and regulations.

§ 75.1713 Emergency medical assistance; first-aid.

[STATUTORY PROVISIONS]

Each operator shall make arrangements in advance for obtaining emergency medical assistance and transportation for injured persons. Emergency communications shall be provided to the nearest point of assistance. Selected agents of the operator shall be trained in first-aid and first-aid training shall be made available to all miners. Each coal mine shall have an adequate supply of first-aid equipment located on the surface, at the bottom of shafts and slopes, and at other strategic locations near the working faces. In fulfilling each of the requirements of this section, the operator shall meet at least minimum requirements prescribed by the Secretary of Health, Education, and Welfare.

§ 75.1713–1 Arrangements for emergency medical assistance and transportation for injured persons; agreements; reporting requirements; posting requirements.

(a) Each operator of an underground coal mine shall make arrangements with a licensed physician, medical service, medical clinic, or hospital to provide 24-hour emergency medical assistance for any person injured at the mine.

(b) Each operator of an underground coal mine shall make arrangements with an ambulance service, or otherwise provide, for 24-hour emergency transportation for any person injured at the mine.

(c) Each operator shall, on or before December 30, 1970, report to the District Manager for the district in which the mine is located the name, title and address of the physician, medical service, medical clinic, hospital or ambulance service with whom arrangements have

been made, or otherwise provided, in accordance with the provisions of paragraphs (a) and (b) of this § 75.1713–1.

(d) Each operator shall, within 10 days after any change of the arrangements required to be reported under the provisions of this § 75.1713–1, report such changes to the District Manager. If such changes involve a substitution of persons, the operator shall provide the name, title, and address of the person substituted together with the name and address of the medical service, medical clinic, hospital, or ambulance service with which such person or persons are associated.

(e) Each operator shall, immediately after making an arrangement required under the provisions of paragraphs (a) and (b) of this § 75.1713–1, or immediately after any change of such arrangement, post at appropriate places at the mine the names, titles, addresses, and telephone numbers of all persons or services currently available under such arrangements to provide medical assistance and transportation at the mine.

§ 75.1713–2 Emergency communications; requirements.

(a) Each operator of an underground coal mine shall establish and maintain a communication system from the mine to the nearest point of medical assistance for use in an emergency.

(b) The emergency communication system required to be maintained under paragraph (a) of this § 75.1713–2 may be established by telephone or radio transmission or by any other means of prompt communication to any facility (for example, the local sheriff, the State highway patrol, or local hospital) which has available the means of communication with the person or persons providing emergency medical assistance or transportation in accordance with the provisions of § 75.1713–1.

§ 75.1713–3 First-aid training; supervisory employees.

On or before December 30, 1970, each operator of an underground coal mine shall conduct first-aid training courses for selected supervisory employees at the mine, and report in writing to the District Manager the names and job titles of all supervisory employees so trained. Thereafter, each operator shall, within 60 days after the selection of a new supervisory employee to be trained, report in writing to the District Manager the name and job title of such employee and the date on which such employee satisfactorily completed a first-aid training course.

§ 75.1713–4 First-aid training program; availability of instruction to all miners.

On or before June 30, 1971, each operator of an underground coal mine shall make available to all miners employed in the mine a course of instruction in first-aid conducted by the operator or under the auspices of the operator, and such a course of instruction shall be made available to newly employed miners within 6 months after the date of employment.

§ 75.1713–5 First-aid training program; retraining of supervisory employees; availability to all miners.

Beginning January 1, 1971, each operator of an underground coal mine shall conduct refresher first-aid training courses each calendar year for all selected supervisory employees, and make available refresher first-aid training courses to all miners employed in the mine.

§ 75.1713–6 First-aid training program; minimum requirements.

(a) All first-aid training programs required under the provisions of §§ 75.1713–3 and 75.1713–4 shall include 10 class hours of training in a course of instruction similar to that outlined in "First Aid, A Bureau of Mines Instruction Manual."

(b) Refresher first-aid training programs required under the provisions of § 75.1713–5 shall include five class hours of refresher training in a course of instruction similar to that outlined in "First Aid, A Bureau of Mines Instruction Manual."

§ 75.1713–7 First-aid equipment; location; minimum requirements.

(a) Each operator of an underground coal mine shall maintain a supply of the first-aid equipment set forth in paragraph (b) of this § 75.1713–7 at each of the following locations:

(1) At the mine dispatcher's office or other appropriate work area on the surface in close proximity to the mine entry;

(2) At the bottom of each regularly traveled slope or shaft; however, where the bottom of such slope or shaft is not more than 1,000 feet from the surface, such first-aid supplies may be maintained on the surface at the entrance to the mine; and

(3) At a point in each working section not more than 500 feet outby the active working face or faces.

(b) The first-aid equipment required to be maintained under the provisions of paragraph (a) of this § 75.1713–7 shall include at least the following:

(1) One stretcher;

(2) One broken-back board. (If a splint stretcher combination is used it will satisfy the requirements of both (1) and (2)).

(3) 24 triangular bandages (15 if a splint-stretcher combination is used).

(4) Eight 4-inch bandage compresses;

(5) Eight 2-inch bandage compresses.

(6) Twelve 1-inch adhesive compresses;

(7) One foille;

(8) Two cloth blankets:

(9) One rubber blanket or equivalent substitute.

(10) Two tourniquets;

(11) One 1-ounce bottle of aromatic spirits of ammonia or 1 dozen ammonia ampules.

(12) The necessary complements of arm and leg splints or two each inflatable plastic arm and leg splints.

(c) All first-aid supplies required to be maintained under the provisions of paragraphs (a) and (b) of this § 75.1713–7 shall be stored in suitable, sanitary, dust tight, moisture proof containers and such supplies shall be accessible to the miners.

§ 75.1714 Self-rescue device.

[STATUTORY PROVISIONS]

A self-rescue device approved by the Secretary shall be made available to each miner by the operator which shall be adequate to protect such miner for 1 hour or longer. Each operator shall train each miner in the use of such device.

§ 75.1714–1 Approved self-rescue devices.

(a) Until March 31, 1971, the requirements of § 75.1714 may be met by making available to each miner two MSA self-rescuers bearing Bureau of Mines approval number BM–1447.

(b) The requirements of § 75.1714 may be met by furnishing an Auer self-rescuer, bearing Bureau of Mines approval number BM–14F–76 or any other self-rescuer which has been officially approved by the Bureau of Mines as meeting the requirements of § 75.1714.

§ 75.1715 Identification check system.

[STATUTORY PROVISIONS]

Each operator of a coal mine shall establish a check-in and check-out system which will provide positive identification of every person underground, and will provide an accurate record of the persons in the mine, kept on the surface in a place chosen to minimize the danger of destruction by fire or other hazard. Such record shall bear a number identical to an identification check that is securely fastened to the lamp belt worn by the person underground. The identification check shall be made of a rust resistant metal of not less than 16 gauge.

§ 75.1716 Operations under water.

[STATUTORY PROVISIONS]

Whenever an operator mines coal from a coal mine opened after March 30, 1970, or from any new working section of a mine opened prior to such date, in a manner that requires the construction, operation, and maintenance of tunnels under any river, stream, lake, or other body of water, that is, in the judgment of the Secretary, sufficiently large to constitute a hazard to miners, such operator shall obtain a permit from the Secretary which shall include such terms and conditions as he deems appropriate to protect the safety of miners working or passing through such tunnels from cave-ins and other hazards. Such permits shall require, in accordance with a plan to be approved by the Secretary, that a safety zone be established beneath and adjacent to such body of water. No plan shall be approved unless there is a minimum of cover to be determined by the Secretary, based on test holes drilled by the operator in a manner to be prescribed by the Secretary. No such permit shall be required in the case of any new working section of a mine which is located under any water resource reservoir being constructed by a Federal agency on December 30, 1969, the operator of which is required by such agency to operate in a manner that protects the safety of miners working in such section from cave-ins and other hazards.

§ 75.1716–1 Operations underwater; notification by operator.

An operator planning to mine coal from coal mines opened after March 30, 1970, or from working sections in mines opened prior to such date, and in such manner that mining operations will be conducted, or tunnels constructed, under any river, stream, lake, or other body of water, shall give notice to the Coal Mine Safety District Manager in the district in which the mine is located prior to the commencement of such mining operations.

§ 75.1716–2 Permit required.

If in the judgment of the Coal Mine Safety District Manager the proposed mining operations referred to in § 75.-1716–1 constitute a hazard to miners, he shall promptly so notify the operator that a permit is required.

§ 75.1716–3 Applications for permits.

An application for a permit required under this section shall be filed with the Coal Mine Safety District Manager and shall contain the following general information:

(a) Name and address of the company.

(b) Name and address of the mine.

(c) Projected mining and ground support plans.

(d) A mine map showing the locations of the river, stream, lake, or other body of water and its relation to the location of all working places.

(e) A profile map showing the type of strata and the distance in elevation between the coal bed and the river, stream, lake or other body of water involved. The type of strata shall be determined by core test drill holes as prescribed by the Coal Mine Safety District Manager.

§ 75.1716–4 Issuance of permits.

If the Coal Mine Safety District Manager determines that the proposed mining operations under water can be safely conducted, he shall issue a permit for the conduct of such operations under such conditions as he deems necessary to protect the safety of miners engaged in those operations.

§ 75.1717 Exemptions.

[STATUTORY PROVISIONS]

No notice under § 75.1716–1 and no permit under § 75.1716–2 shall be required in the case of any new working section of a mine which is located under any water resource reservoir being constructed by a Federal agency as of December 30, 1969, and where the operator is required by such agency to operate in a manner that adequately protects the safety of miners.

§ 75.1718 Drinking water.

[STATUTORY PROVISIONS]

An adequate supply of potable water shall be provided for drinking purposes in the active workings of the mine, and such water shall be carried, stored, and otherwise protected in sanitary containers.

§ 75.1718–1 Drinking water; quality.

(a) Potable water provided in accordance with the provisions of § 75.1718 shall meet the applicable minimum health requirements for drinking water established by the State or community in which the mine is located.

(b) Where no state or local health requirements apply to drinking water or where no state or local minimum health requirements exist, drinking water provided in accordance with the provisions of § 75.1718 shall contain a minimum of 0.2 milligrams of free chlorine per liter of water.

Subpart S—Approved Books and Records

§ 75.1800 Scope.

(a) The provisions of this Subpart S set forth the requirements for recording the results of certain tests and examinations conducted in underground coal mines. In addition, it specifies the approved books in which such results are to be recorded and the manner in which they shall be maintained.

(b) The approved books required to be maintained in accordance with the provisions of §§ 75.1801 through 75.1808 shall be secured by each operator from commercial sources. Facsimile copies of Bureau of Mines Forms 6–1331, 6–1489, 6–1490, 6–1491, 6–1492, 6–1493, and 6–1494, have been filed with the Office of the Federal Register, General Services Administration, Washington, D.C. 20408, and sample copies of each of these forms are available for the use of commercial printers or operators at each District or Subdistrict Coal Mine Health and Safety Office of the Bureau of Mines.

(c) When the District Manager has determined that record books kept in satisfaction of State requirements provide the information specified in any record book required by this Subpart S, and so advises the operators of mines located in that State, such approved State record books will be accepted in lieu of the record books specified in this Subpart S.

§ 75.1801 Examination of emergency escapeways and facilities, smokers' articles and fire doors; recording requirements; approved books.

The results of examinations of emergency escapeways and facilities, fire doors, and for smokers' articles required to be conducted under the provisions of §§ 75.1702, 75.1704, and 75.1708, shall be recorded in a book entitled "Examinations of Emergency Escapeways and Facilities; Smokers' Articles; Fire Doors" (Bureau of Mines Form 6–1331, Budget Bureau No. 42–R1589, March 1970).

§ 75.1802 Preshift—onshift and daily report; recording requirements; approved books.

The results of daily examinations and tests for hazardous conditions and roof bolt torque required to be conducted under the provisions of §§ 75.200–7(b)(3)(iii), 75.303, 75.304, 75.304–2, 75.309, 75.309–4, and 75.324, shall be recorded in a book entitled "Preshift—Onshift and Daily Report" (Bureau of Mines Form 6–1489, Budget Bureau No. 42–R1589, March 1970).

§ 75.1803 Weekly examinations for methane and hazardous conditions; recording requirements; approved books.

The results of weekly examinations for methane and hazardous conditions required to be conducted under the provisions of §§ 75.305, 75.306, and 75.316–2(f), shall be recorded in a book entitled "Weekly Examination for Methane and Hazardous Conditions" (Bureau of Mines Form 6–1490, Budget Bureau No. 42–R1589, March 1970).

§ 75.1804 Daily and monthly examination of ventilation equipment; recording requirements; approved books.

The results of daily and monthly examinations of ventilation equipment required to be conducted under the provisions of §§ 75.300 and 75.300–4, shall be recorded in a book entitled "Daily and Monthly Examination of Ventilation Equipment" (Bureau of Mines Form 6–1491, Budget Bureau No. 42–R1589, March 1970).

§ 75.1805 Examination of electrical equipment; recording requirements; approved books.

The results of examinations of electrical equipment required to be conducted under the provisions of §§ 75.313–1, 75.512, 75.512–2, 75.703–3(d)(11), 75.812, 75.812–2, 75.900, 75.900–3, and 75.900–4, shall be recorded in a book entitled "Examination of Electrical Equipment" (Bureau of Mines Form 6–1492, Budget Bureau No. 42–R1589, March 1970).

§ 75.1806 Monthly examination of surface high voltage circuit breakers; recording requirements; approved books.

The results of monthly examinations of high voltage circuit breakers on the surface required to be conducted under the provisions of §§ 75.800, 75.800–3, and 75.800–4, shall be recorded in a book entitled "Monthly Examination of Surface High Voltage Circuit Breakers" (Bureau of Mines Form 6–1493, Budget Bureau No. 42–R1589, March 1970).

§ 75.1807 Daily inspection of hoisting equipment; recording requirements; approved books.

The results of daily examinations of hoisting equipment required to be conducted under the provisions of §§ 75.1400, 75.1400–2, 75.1400–3, 75.1400–4, 75.1401–3, and 75.1402–2, shall be recorded in a book entitled "Report of Daily Inspection of Hoisting Equipment" (Bureau of Mines Form 6–1494, Budget Bureau No. 42–R1589, March 1970).

§ 75.1808 Maintenance of approved books and records; requirements.

All approved books and records maintained under the provisions of §§ 75.1801 through 75.1807 shall be stored in a fireproof repository on the surface of the mine chosen by the mine operator to minimize their destruction by fire or other hazard and such records shall be made available to interested persons.

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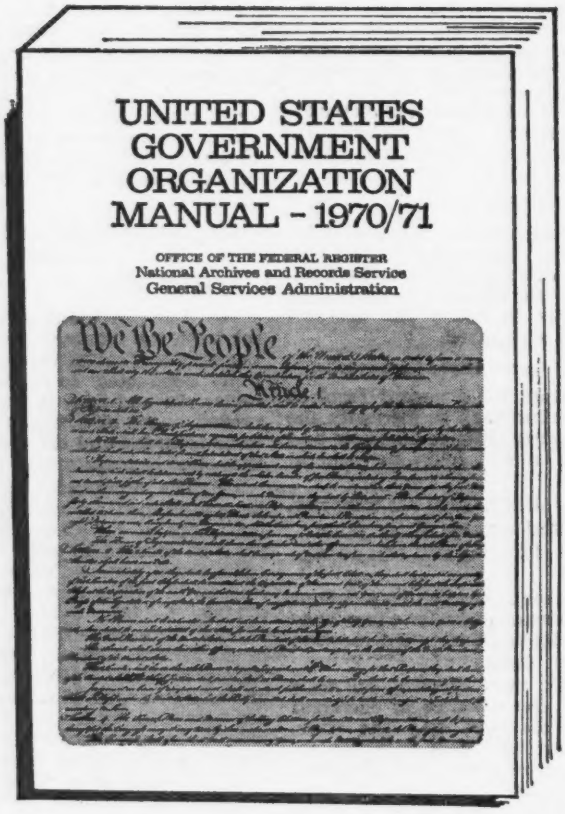

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